Chapter 4

Future Conditions

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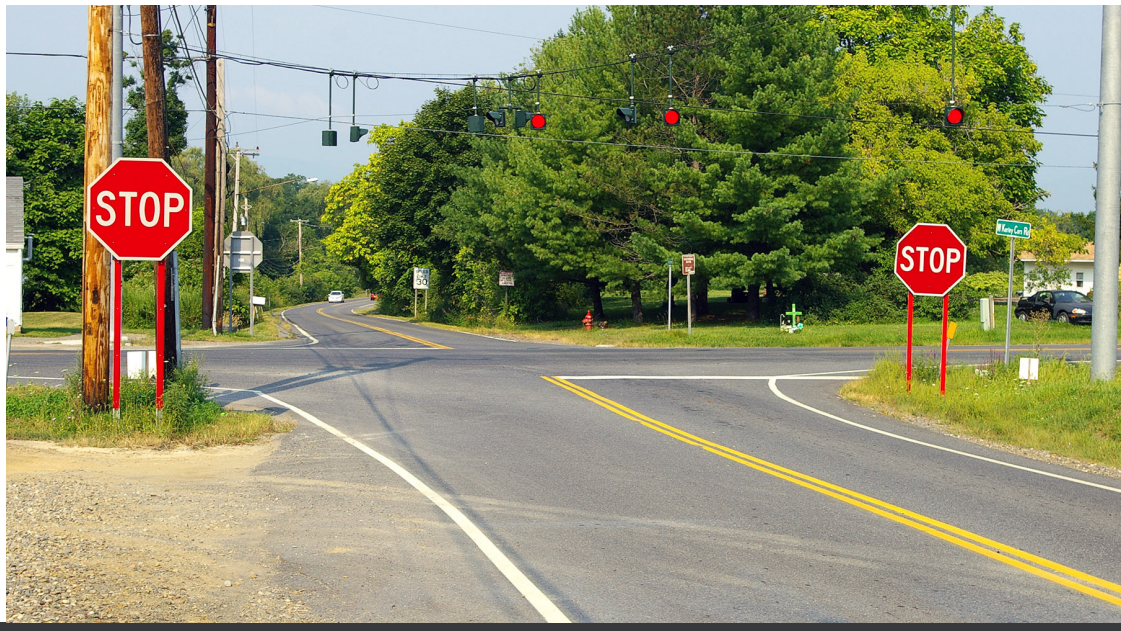

Upper Route 9G Corridor Management Plan

Technical Memorandum No. 4
Future Conditions Report

PDCTC
Poughkeepsie-Dutchess County Transportation Council

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REVISED JANUARY 2016

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4.0 Introduction

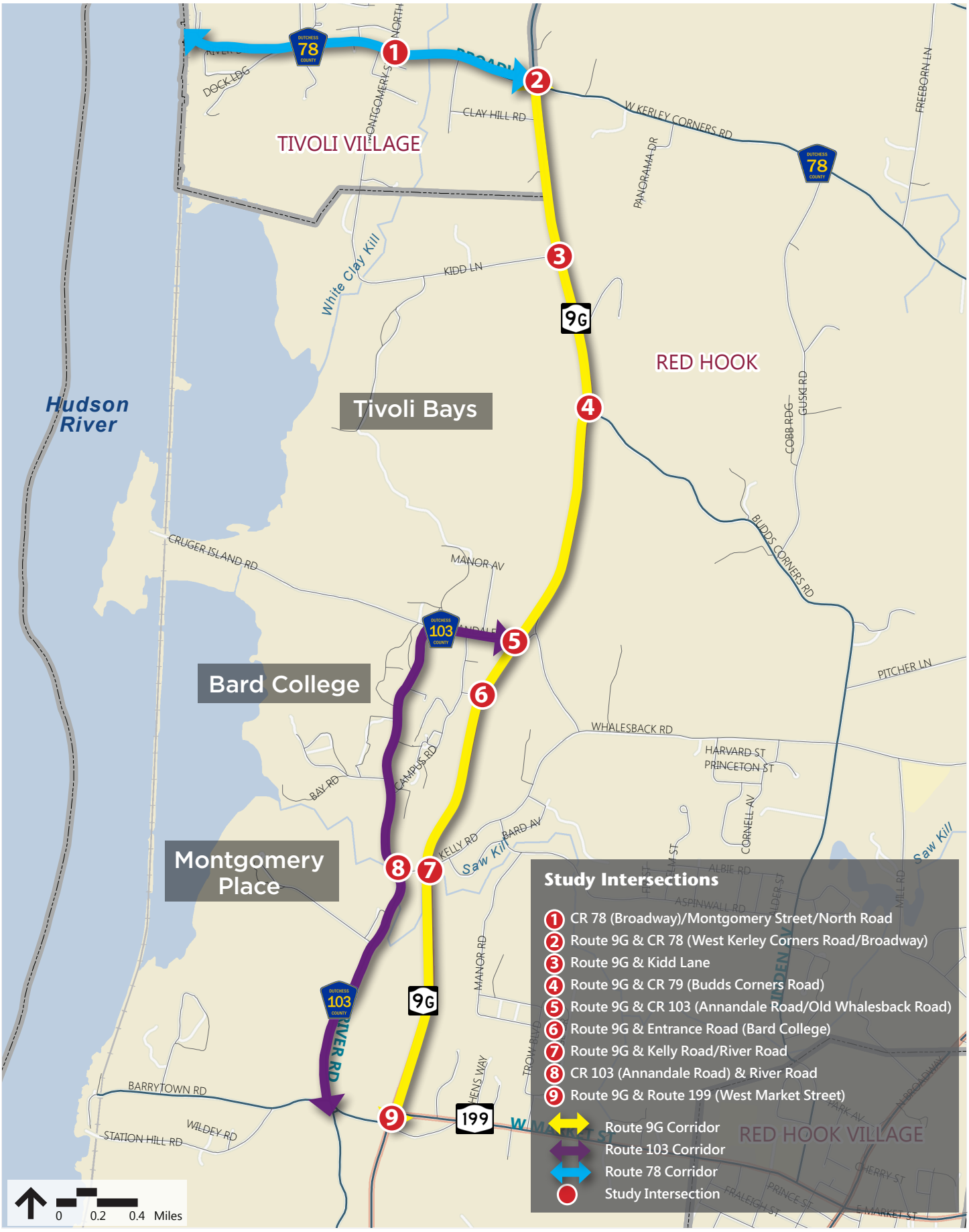
The Upper Route 9G Corridor Management Plan (CMP) is a federally-funded project that is managed by the Poughkeepsie-Dutchess County Transportation Council (PDCTC), the designated Metropolitan Planning Organization for Dutchess County. The CMP study grew out of concerns about transportation safety along the study corridors, which include a four-mile segment of NYS Route 9G in the Village of Tivoli and Town of Red Hook, a portion of County Route (CR) 78 (Broadway/West Kerley Corners Road) in the Village of Tivoli and a portion of CR 103 (Annandale Road) in the vicinity of Bard College. The CMP will include an evaluation of current transportation and crash data (Tasks 1 and 2), a formal road safety assessment (Task 3), an analysis of future transportation conditions (Task 4) and recommendations for corridor and intersection improvements (Task 5) with the goal of providing a safer environment for motorists, pedestrians and bicyclists.

This Technical Memorandum No. 4 (Task 4 listed in the CMP scope of services) summarizes future operational conditions in the year 2025 for the Upper Route 9G CMP. Technical Memorandum Nos. 1, 2 and 3, provided in separate documents, consist of a review of existing transportation conditions (Technical Memorandum No. 1, Task 1), an evaluation of the area's crash history (Technical Memorandum No. 2, Task 2) and a Road Safety Assessment of the study area (Technical Memorandum No. 3, Task 3). Technical Memorandum No. 5 will include recommendations for improving operations and safety in the study area.

4.1 Study Area

The study area includes a segment of NYS Route 9G from CR 78 (Broadway/West Kerley Corners Road) in the Village of Tivoli to NYS Route 199 (West Market Street) in the Town of Red Hook, CR 78 (Broadway) in Tivoli from NYS Route 9G to the Hudson River, and CR 103 (Annandale Road/River Road) from NYS Route 9G through Bard College to CR 82 (Barrytown Road). The study area limits are shown in **Figure 4-1**.

Within the study area, nine (9) intersections were selected for detailed analysis of operations and safety for both vehicular and non-vehicular traffic and are shown in **Table 4-1**.



Study Area
Figure 4-1

Table 4-1: Study Intersections

Intersection Number	Study Intersections
1	CR 78 (Broadway)/Montgomery Street/North Road
2	Route 9G & CR 78 (West Kerley Corners Road/Broadway)
3	Route 9G & Kidd Lane
4	Route 9G & CR 79 (Budds Corners Road)
5	Route 9G & CR 103 (Annandale Road/Old Whalesback Road)
6	Route 9G & Entrance Road (Bard College)
7	Route 9G & Kelly Road/River Road
8	CR 103 (Annandale Road)/River Road
9	Route 9G & Route 199 (West Market Street)

This technical memorandum provides an analysis of future transportation conditions in the year 2025 at the nine study intersections. The existing traffic volume data from Technical Memorandum No. 1 were projected to the year 2025 based on an assessment of future regional land use, including information from the Bard College Master Plan and the PDCTC's *Major Projects Report*. Historical traffic volume data and projections from the PDCTC's regional travel demand model were also incorporated in the development of the 2025 traffic volumes.

4.2 Study Corridors

The three study corridors are described below.

1. **NYS Route 9G**
   NYS Route 9G is a north-south, two-way, State highway with one travel lane in each direction. The roadway is classified as a rural major collector north of CR 78 (West Kerley Corners Road/Broadway) and as an urban major collector from CR 78 to Route 199 (West Market Street). Traffic signals are provided on Route 9G at the intersections with Route 199 (West Market Street) and with Kelly Road/River Road.
2. **County Route 103 (Annandale Road)**
   CR 103 (Annandale Road) is a two-lane, County roadway that travels in a north/south direction (except for a 1/3 of a mile segment between its intersection with Cruger Island Road and Route 9G). CR 103 bisects the Bard College campus in the area between River Road and Cruger Island Road. Between Route 9G and River Road, CR 103 is classified as an urban major collector. To the south of the River Road-Annandale Road triangle, CR 103 is classified as a local road.
3. **County Route 78**
   County Route 78 is an east-west County roadway with one travel lane in each direction. To the east of Route 9G, the roadway is known as West Kerley Corners Road and is classified as a rural minor collector. To the west of Route 9G, CR 78 is known as Broadway. Between Route 9G and the Tivoli "Four Corners" intersection (Montgomery Street and North Road), CR 78 is designated as an urban major collector. To the west of Montgomery Street/North Road, the roadway is classified as an urban minor collector.

4.3 Study Area Intersections

There are 9 study intersections along the three corridors, with 7 study intersections on NYS Route 9G and one each on CR 103 and CR 78. Of the 9 study intersections, 2 are signalized (both on Route 9G) and 7 are unsignalized. The geometry at each intersection is described below.

Intersection 1 – CR 78 (Broadway) and Montgomery Street/North Road is a four-legged, all –way stop-controlled intersection located in the business district of Tivoli, (see **Figure 4-2** below). Each approach to the intersection includes one travel lane in each direction. Parking is permitted on each intersection leg, except for the west side of North Road and Montgomery Street. Sidewalks are provided along each side of both roads and a stamped, contrasting color pedestrian crosswalk is provided across each leg.

Figure 4-2: *Aerial view of Intersection 1*

Source: Google Earth

Looking west on CR 78 at Montgomery St.

Intersection 2 – NYS Route 9G and CR 78 (West Kerley Corners Rd/Broadway) is a four-way intersection that is controlled by a flashing traffic signal with the red indications facing the CR 78 approaches and the yellow indications facing the NYS Route 9G approaches. Supplemental stop signs are also provided on the CR 78 approaches to increase driver awareness of the flashing red indications. Each approach to the intersection consists of a single travel lane in each direction and parking is not permitted on any approach leg, as shown in **Figure 4-3**. Sidewalks and crosswalks are not provided at this intersection.

Figure 4-3: *Aerial view of Intersection 2*

Source: Google Earth

Looking south on Route 9G at CR 78

Intersection 3 – NYS Route 9G and Kidd Lane is a three-legged, unsignalized intersection with a Stop sign controlling movements from Kidd Lane, as shown on **Figure 4-4**. Each approach provides one travel lane. Sidewalks and crosswalks are not provided at this intersection.

Figure 4-4: *Aerial view of Intersection 3*

Source: Google Earth

Looking east on Kidd Lane towards Route 9G

Intersection 4 – NYS Route 9G and CR 79 (Budds Corners Road) is a three-legged, unsignalized intersection with a Stop sign controlling movements from CR 79. CR 79 intersects NYS Route 9G at an acute angle as shown in **Figure 4-5.** Each approach provides one travel lane per direction and parking is not permitted on either roadway. Sidewalks and pedestrian crosswalks are not provided at this intersection.

Figure 4-5: *Aerial view of Intersection 4*

Source: Bing Maps

Looking south on Route 9G at CR 79

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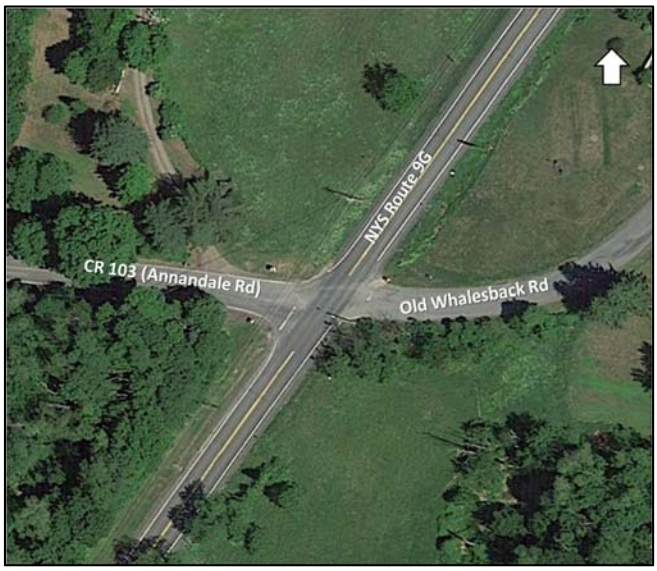
Intersection 5 – NYS Route 9G and CR 103 (Annandale Rd)/Old Whalesback Rd is a four-legged, unsignalized intersection, as shown on **Figure 4-6**. Each approach provides a single travel lane per direction with movements on the CR 103 and Old Whalesback Road approaches controlled by a Stop sign. Sidewalks and crosswalks are not provided at this intersection.

Figure 4-6: *Aerial view of Intersection 5*



Source: Google Earth

Looking west at CR 103 (Annandale Rd) from Route 9G

Intersection 6 – NYS Route 9G and Entrance Road (Bard College) is a four-legged, unsignalized intersection with one travel lane on each approach, as shown in **Figure 4-7** below. Opposite the Entrance Road is the driveway to the Bard Alumni/ae Center and Two Boots restaurant. Exiting movements from the Bard College Entrance Road are controlled by a Stop sign. A crosswalk is provided within the parking lot of the Alumni/ae Center and a sidewalk is provided along the south side of the Entrance Road, to the west of the intersection. Sidewalks and crosswalks are not provided along Route 9G at this intersection.

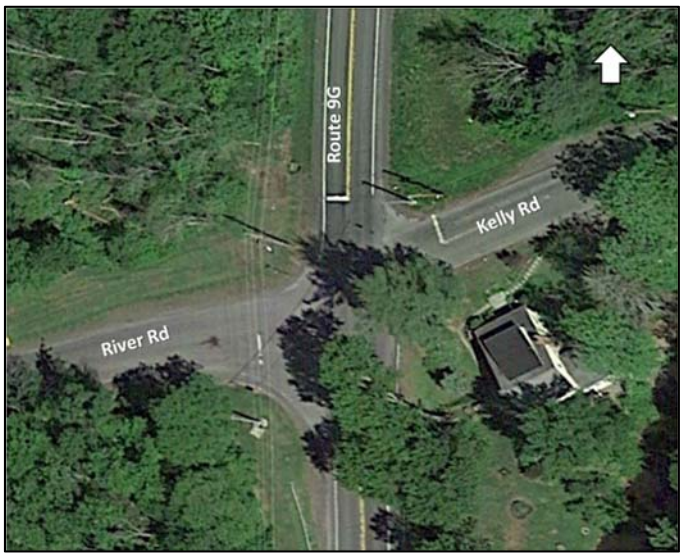
Figure 4-7: *Aerial view of Intersection 6*

Source: Google Earth

Looking north along Route 9G at Entrance Rd

Intersection 7 – NYS Route 9G and Kelly Road/River Road is a four-legged, signalized intersection with one travel lane provided in each direction as shown on **Figure 4-8**. The intersection is controlled by a two-phase (north/south and east/west), semi-actuated traffic signal (the signal timing adjusts if traffic is detected on the Kelly Rd/River Rd approaches). Sidewalks and crosswalks are not provided at this intersection.

Figure 4-8: *Aerial view of Intersection 7*



Looking north along Route 9G at Kelly Rd/River Rd

Source: Google Earth

Intersection 8 – Route 103 (Annandale Road) and River Road form a triangle, with three separate unsignalized "T" intersections as shown in **Figure 4-9**. Each intersection is comprised of single lane approaches with the minor street movements controlled by either a Yield sign (on the Annandale Road approach to River Road) or Stop signs (on the River Road and Annandale Road approaches to CR 103). A sidewalk is provided along the west side of CR 103 (Annandale Road), however, there are no crosswalks at any of the intersections.

Figure 4-9: *Aerial view of Intersection 8*

Looking west along River Rd at Annandale Rd

Source: Google Earth

Intersection 9 – NYS Route 9G and NYS Route 199 (West Market Street) is a three-legged, signalized intersection as shown on **Figure 4-10**. Route 199, the east leg of the intersection, provides a single approach lane. The northbound Route 9G approach consists of two lanes: a through lane and an exclusive channelized right-turn lane, which is controlled by a Yield sign at Route 199. The southbound approach of Route 9G provides an exclusive left-turn lane and a through lane. The intersection is controlled by a three-phase, semi-actuated traffic signal which provides a protected phase for the southbound left-turn movement. Sidewalks and crosswalks are not provided at this intersection.

Figure 4-10: *Aerial view of Intersection 9*

Source: Google Earth

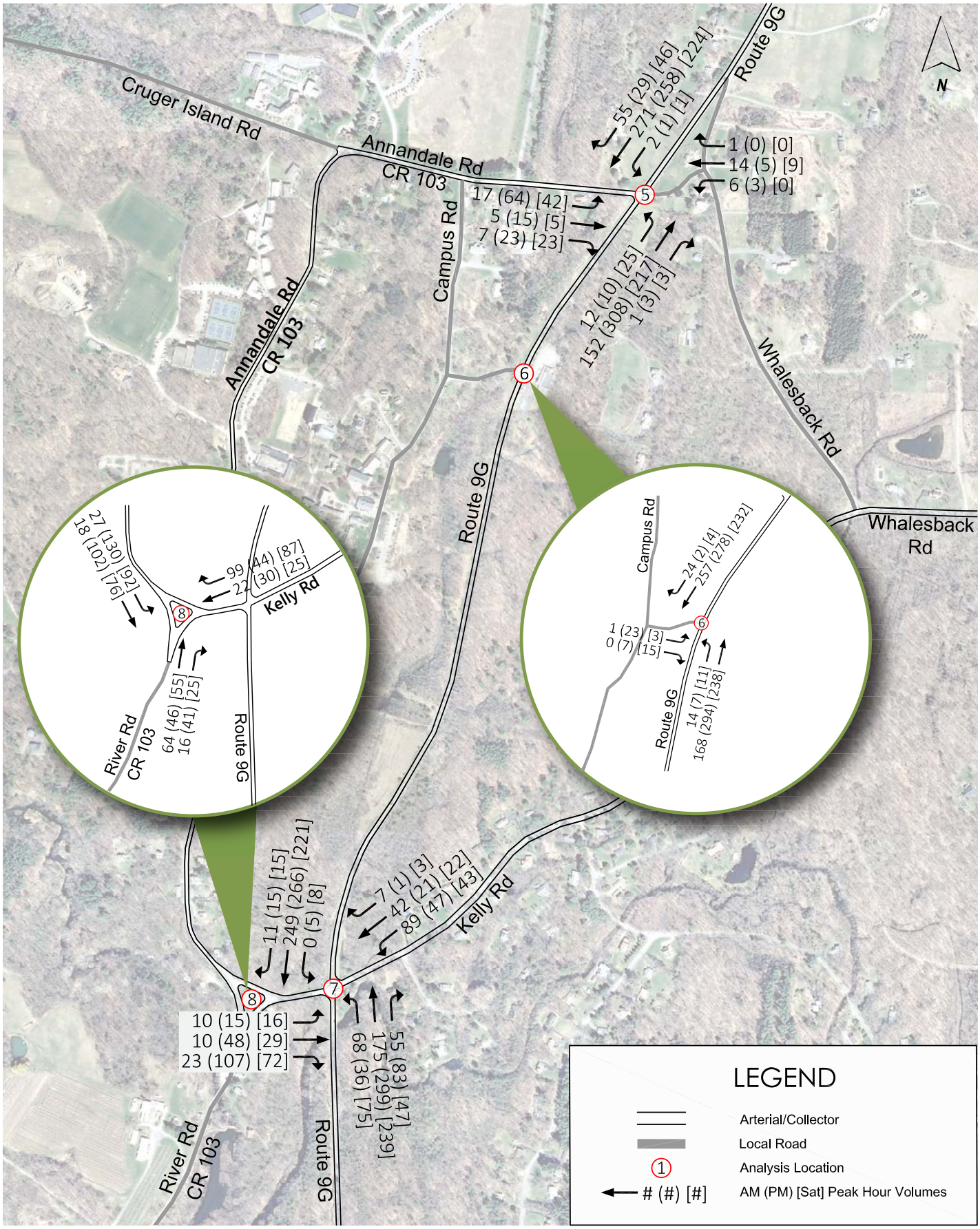
Looking west along Route 199 at Route 9G

4.4 Traffic Volumes

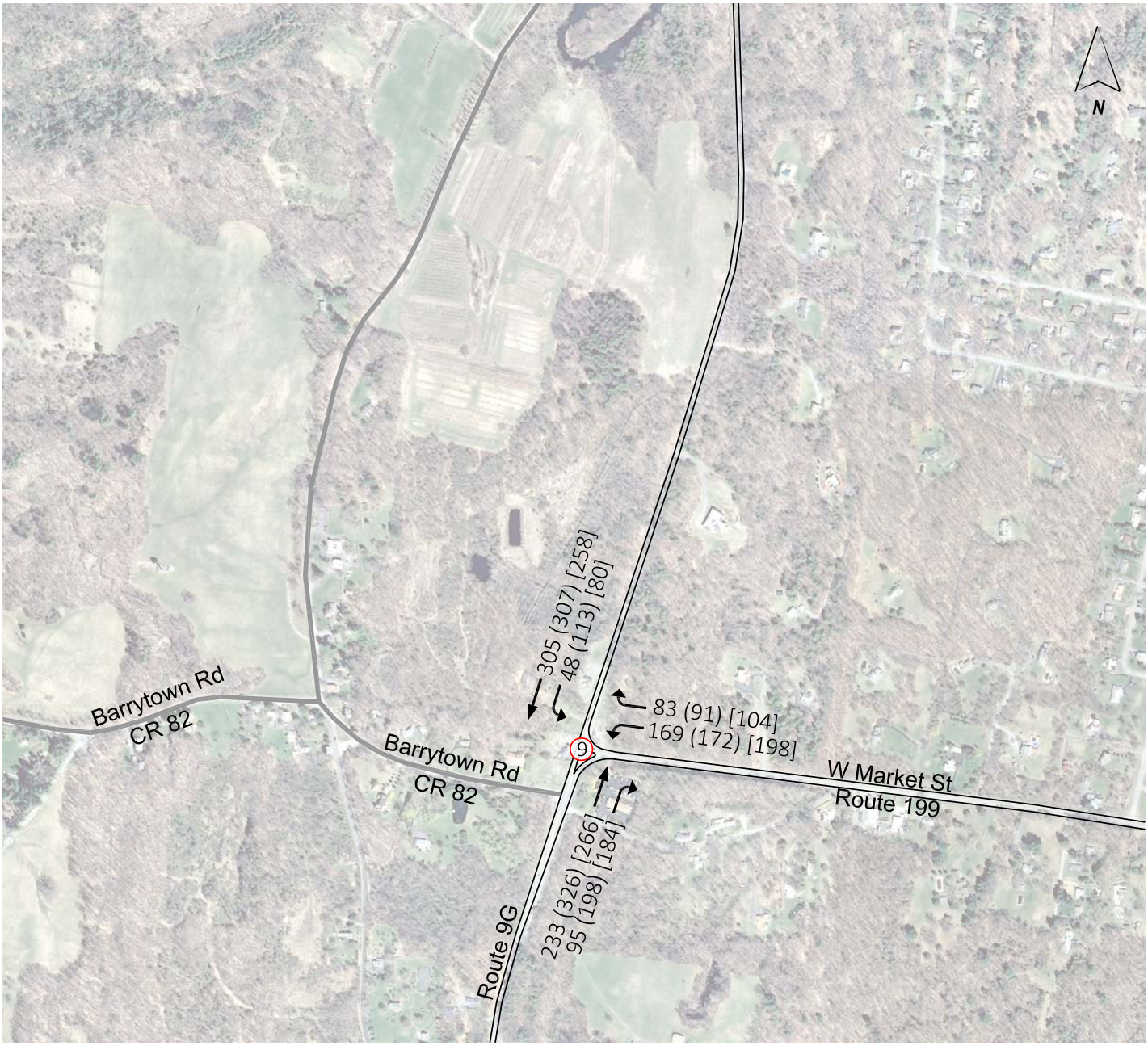
Traffic volume data were collected at the nine study intersections in April 2015. Manual turning movement counts were conducted during the Weekday AM and PM peak periods on Thursday April 23, 2015 and during the Saturday midday peak period on April 25, 2015. The traffic counts were tabulated and the combined volumes for all intersections indicate that the peak hours occur from 8:15 to 9:15 AM and 4:45 to 5:45 PM on weekdays, and from 1:00 to 2:00 PM on Saturday. The peak hours at some intersections occurred at different times than the overall peak hours, although the difference in volumes is not considered significant. The 2015 existing traffic volumes for the AM, PM and Saturday peak hours are shown on **Figures 4-11 through 4-14.**

Existing Peak Hour Traffic Volumes
Figure 4-11

Existing Peak Hour Traffic Volumes, cont.
Figure 4-12



Existing Peak Hour Traffic Volumes, cont.
Figure 4-13


N
Barrytown Rd
CR 82
Barrytown Rd
CR 82
W Market St
Route 199
Route 9G
9
305 (307) [258]
48 (113) [80]
83 (91) [104]
169 (172) [198]
233 (326) [266]
95 (198) [184]
LEGEND
Arterial/Collector
Local Road
1
Analysis Location
(#) [#]
AM (PM) [Sat] Peak Hour Volumes

4.5 Traffic Volume Projections

The existing traffic volumes were projected to the 2025 forecast year by a general growth rate of 18 percent that was determined from an assessment of future land use in the area and on a review of historical traffic volume data and the PDCTC's regional travel demand model, as described below.

1. **Future Land Use**
   To determine future traffic growth, the Bard College Master Plan and the PDCTC's *2013 Major Projects Report* were reviewed to identify any planned developments that would increase traffic volumes in the study area. The Bard College Master Plan proposes a 65-bed increase in on-campus student housing to meet current demand. It is expected that students living off-campus will relocate to the new dormitory space, resulting in little or no increase (and possibly a decrease) in traffic volumes associated with the college. The college also proposes expansions to several on-campus academic buildings and is in the process of acquiring Montgomery Place. However, these expansions are to address current needs and the college has no plans to increase enrollment, with the result that no increase in vehicular trips to the college is expected.

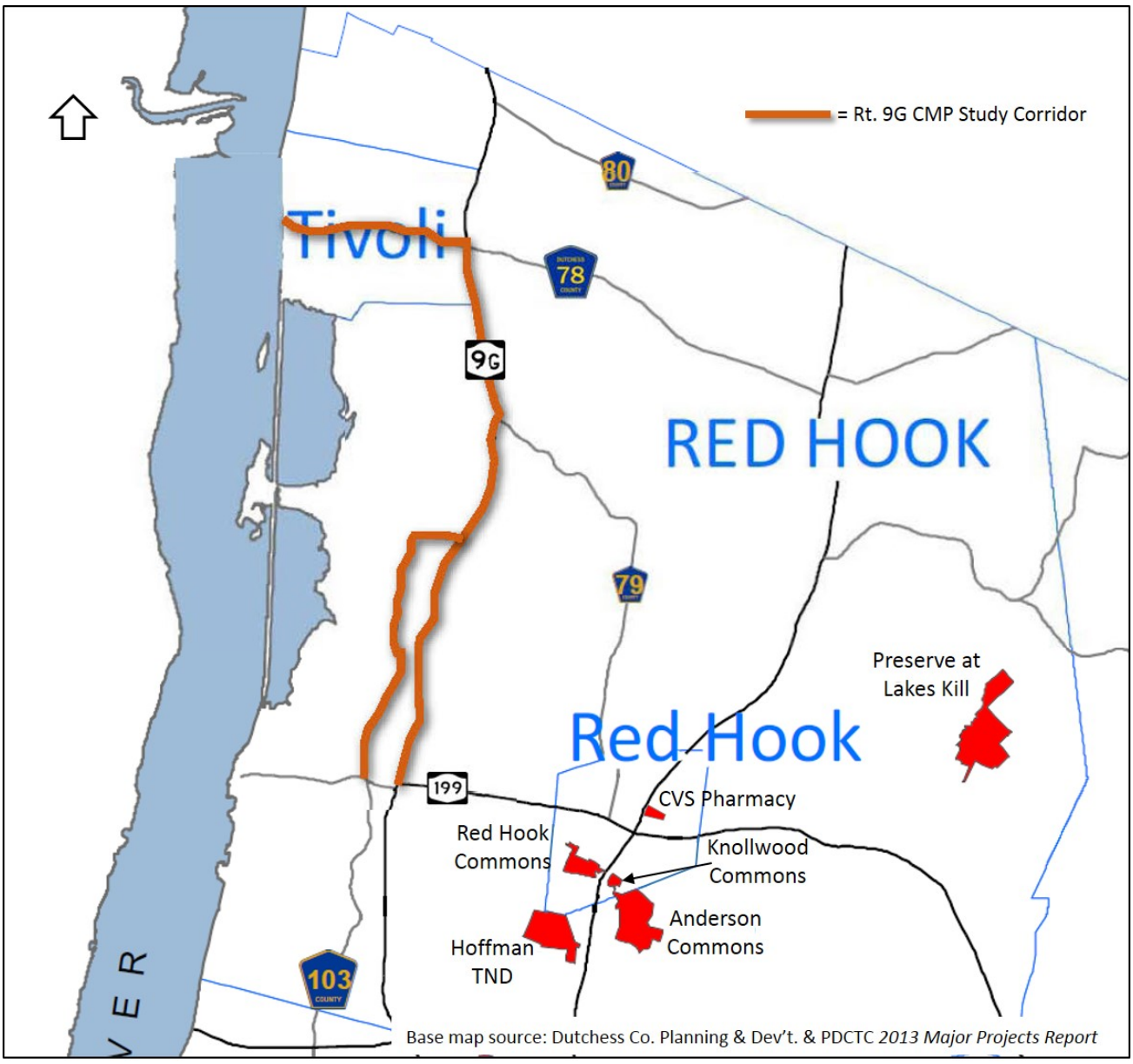
   The Dutchess County Department of Planning and Development and the PDCTC publish an annual report that provides a listing of planned developments in Dutchess County. The latest publication, the *2013 Major Projects Report,* includes all active major projects in the county, which for the Red Hook area are defined as having at least 10 dwelling units for residential projects, 10,000 square feet (sf) of gross floor area for non-residential projects or any project with a rezoning of more than 25 acres. A copy of the pertinent pages from the report is provided in the Appendix.

   Within the Upper Route 9G CMP study area, five projects are included in the *2013 Major Projects Report*. More recent information provided by the PDCTC adds a sixth project (CVS Pharmacy). The six active projects within the study area that meet these minimum thresholds are listed below and are shown on **Figure 4-15**.

   - Town of Red Hook
     - Anderson Commons (Fisk St.) – 24 condominiums; 28 single family residential (SFR) homes
     - Hoffman Traditional Neighborhood (Old Farm Rd) – 48 condominiums; 48 SFR homes
     - Preserve at Lakes Kill (Feller Newmark Rd) – 11 SFR homes
   - Village of Red Hook
     - CVS Pharmacy (US Route 9) – 13,745 sf of retail
     - Knollwood Commons (Firehouse Lane) – 7,200 sf of retail/restaurant
     - Red Hook Commons (US Route 9) – retail/restaurant (development size not provided)
   - Village of Tivoli (no major projects planned)

These projects are mainly located in or near the Village of Red Hook, to the east of the Upper Route 9G CMP study area and are not expected to increase traffic significantly on Route 9G, CR 103 or CR 78.

Figure 4-15: ***Major Projects***



2. **Historical Traffic Volume Data**

Daily traffic volume data obtained from the NYSDOT and PDCTC for Route 9G, CR 103 and CR 78 were reviewed to identify the historical traffic patterns within the study corridors. A comparison of 2007 daily volumes to 2014 volumes indicate that the combined Average Annual Daily Traffic (AADT) on the three corridors has decreased by an average of 1.2 percent per year. However, comparing recent 2013 to 2014 AADT volumes indicate that overall traffic volumes have increased by 1.7 percent. Locations can experience year-to-year fluctuations that may not be indicative of overall travel trends. The traffic volume comparison is shown in **Table 4.2**.

Table 4.2: **Historical Traffic Volume Comparison**

Corridor	Annual Change in AADT	
	2007 to 2014	**2013 to 2014**
NYS Route 9G	-0.1% (1)	2.2%
CR 103	-0.9%	3.7%
CR 78 (Broadway)	-2.6%	-0.9%
All Corridors	**-1.2%**	**1.7%**

Note: Route 9G AADT comparison is from 2008 to 2014.

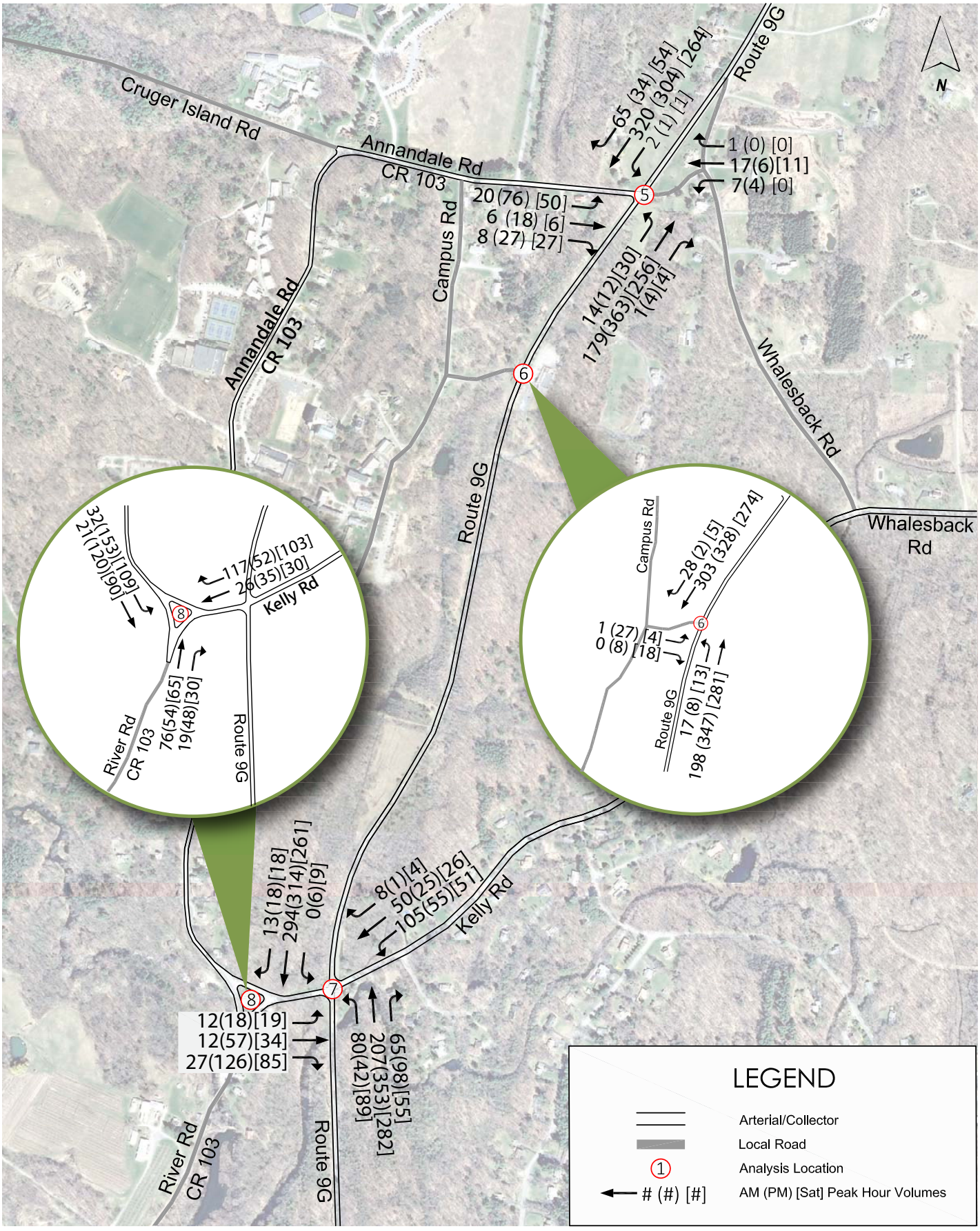
3. **Travel Demand Model**

Traffic volume projections from the PDCTC's regional travel demand model were reviewed to determine regional traffic growth. The 2015 travel demand model volumes along Route 9G were compared to the 2025 model volumes. This comparison indicates that a maximum increase of 9 percent is anticipated to occur between 2015 and 2025 (less than 1 percent growth per year).

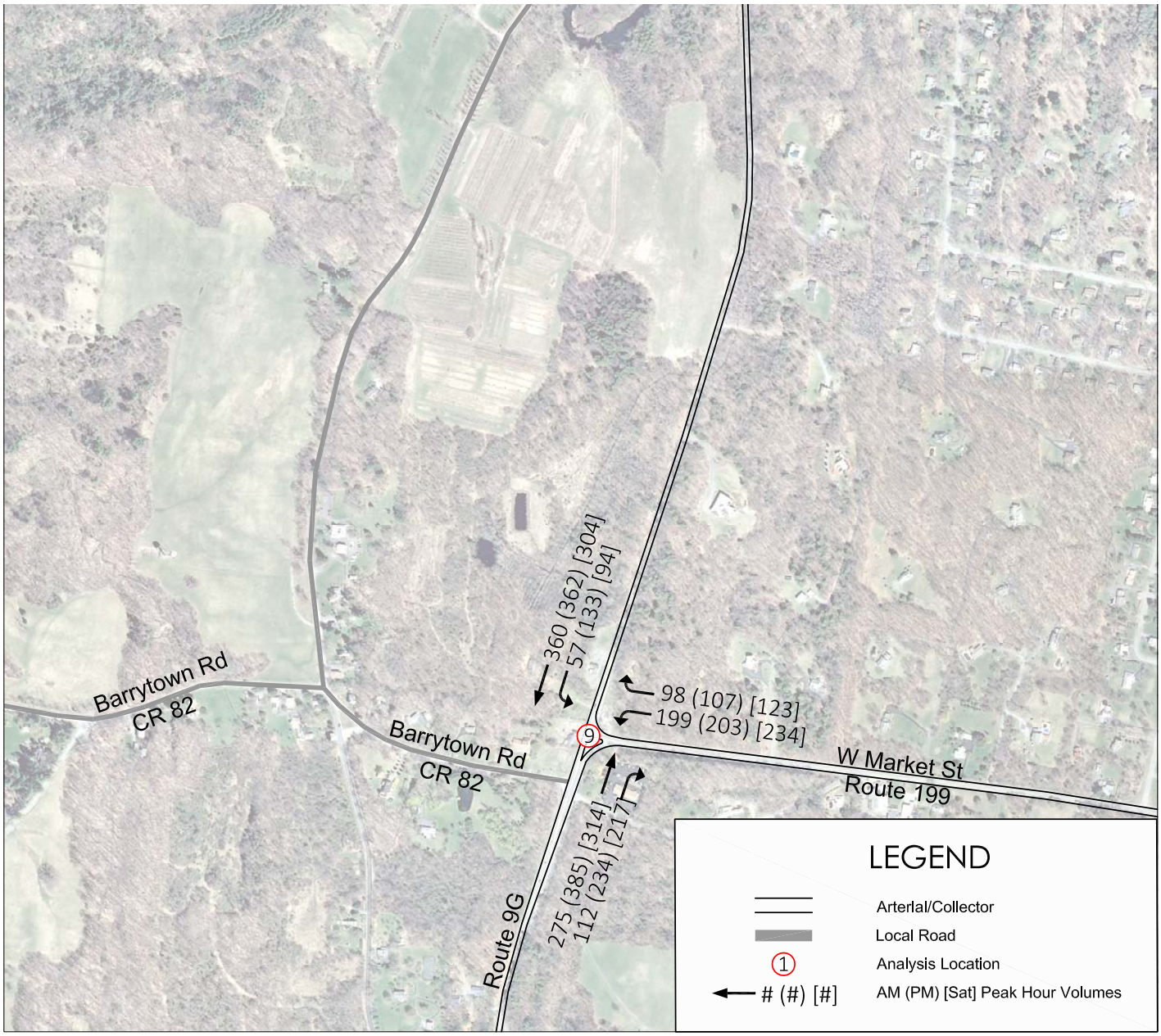
Although the planned development activity in the area and the historical and projected regional growth are relatively minor, the existing traffic volumes at the study intersections were increased by an additional 9 percent (18 percent total) to account for traffic from any future planned vicinity developments not listed in the *Major Projects Report*. The 2025 Future traffic volumes are shown on **Figures 4-16 through 4-19**.

2025 Future Peak Hour Traffic Volumes
Figure 4-16

2025 Future Peak Hour Traffic Volumes, cont.
Figure 4-17



2025 Future Peak Hour Traffic Volumes, cont.
Figure 4-18



2025 Future Peak Hour Traffic Volumes, cont.
Figure 4-19

4.6 Traffic Intersection Analysis

To quantify future operating conditions at the study intersections, detailed intersection capacity analyses were prepared using Synchro software (version 8) and the 2025 Future Weekday AM, Weekday PM, and Saturday peak hour traffic volumes. The term "level of service" (LOS) is used to denote the operating conditions that occur at an intersection under various traffic volume loads. LOS designations range from A to F, with LOS A representing free-flowing operating conditions and LOS F representing congested operating conditions. LOS D is generally considered acceptable during peak hours, LOS E indicates that the intersection or approach is operating at or near capacity and LOS F represents over-capacity conditions.

Level of Service designations are reported differently for signalized and unsignalized intersections. For signalized intersections, LOS is reported for the entire intersection (based on a weighted average of the average delay on each of the individual approaches), as well as for the individual approaches. For unsignalized intersections, since mainline through traffic typically experiences minimal delays, LOS designations are reported based on delay for only for the movements which are required to stop or yield to other vehicles. The LOS thresholds for signalized and unsignalized intersections are shown in **Table 4-3**.

Table 4-3: Intersection Level of Service Criteria

Level of Service	Signalized Delay (sec/veh)	Unsignalized Delay (sec/veh)
LOS A	0.00-10.00	0.00-10.00
LOS B	10.01-20.00	10.01-15.00
LOS C	20.01-35.00	15.01-25.00
LOS D	35.01-55.00	25.01-35.00
LOS E	55.01-80.00	35.01-50.00
LOS F	>80.00	>50.00

Table 4-4 below summarizes results of the level of service analyses at the study locations. Copies of the Synchro analysis printouts are provided in the Appendix.

Table 4-4: Intersection Level of Service Summary – 2025 Future Conditions

Intersection	Approach	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
		LOS	Delay	LOS	Delay	LOS	Delay
Unsignalized Intersections							
1. CR 78 (Broadway) /Montgomery St/North Rd	EB	A	8.0	A	7.6	A	7.9
	WB	A	7.7	A	8.1	A	7.9
	NB	A	7.7	A	7.3	A	7.7
	SB	A	7.7	A	7.7	A	7.8
2. Route 9G & CR 78 (West Kerley Corners Rd/Broadway)	EB	B	12.3	C	15.4	B	12.5
	WB	C	16.8	C	24.9	C	18.4
	NB	A	1.9	A	2.8	A	2.5
	SB	A	0.4	A	0.4	A	0.5
3. Route 9G & Kidd Ln	EB	B	11.3	B	11.7	B	10.5
	NB	A	0.8	A	0.7	A	1.0
	SB	A	0.0	A	0.0	A	0.0
4. Route 9G & CR 79 (Budds Corners Rd)	WB	B	10.4	B	12.7	B	10.8
	NB	A	0.0	A	0.0	A	0.0
	SB	A	1.1	A	1.3	A	1.1
5. Route 9G & CR 103 (Annandale Rd/Old Whalesback Rd)	EB	B	14.4	C	20.4	C	15.9
	WB	B	14.4	C	17.2	C	15.4
	NB	A	0.7	A	0.4	A	1.1
	SB	A	0.1	A	0.0	A	0.0
6. Route 9G & Entrance Rd (Bard College)	EB	B	12.8	B	14.6	B	10.8
	NB	A	0.8	A	0.3	A	0.5
	SB	A	0.0	A	0.0	A	0.0
8. CR 103 & (Annandale Rd)/ River Rd Triangle (1)	East	A	9.2	B	10.1	A	9.8
	North	A	9.3	A	9.2	A	9.1
	South	A	9.2	A	9.9	A	9.7
Signalized Intersections							
7. Route 9G & Kelly Rd/River Rd (signalized)	EB	B	13.2	B	19.2	B	16.0
	WB	C	33.8	D	38.8	C	31.4
	NB	A	7.4	A	6.1	A	5.8
	SB	A	6.6	A	5.0	A	4.4
Overall Intersection		B	12.4	B	10.5	A	9.1
9. Route 9G & Route 199 (West Market St) (signalized)	WB	C	30.8	C	30.0	C	30.9
	NB	B	14.5	B	16.8	B	14.8
	SB	A	9.0	A	9.2	A	9.4
Overall Intersection		B	16.8	B	17.0	B	17.6

Note: (1) At CR 103 triangle intersection with River Road, LOS for "East" = minor street left-turn at eastern corner of triangle, "North" = minor street left-turn at northern corner and "South" = minor street left-turn at southern corner. These are the approaches controlled by Stop or Yield signs.

As can be seen in the table, in the future with the conservatively projected growth in traffic volumes, all of the intersections within the study area are projected to experience good levels of service during each peak hour. All minor street movements at unsignalized intersections will operate at acceptable level of service "C" or better. The two signalized Route 9G intersections (with Kelly Road and with Route 199) will experience level of service A or B with overall delays averaging no more than 17.6 seconds. These conditions indicate that the available capacity of the corridor will considerably exceed the anticipated peak vehicular demand. It is noted that occasional events may continue to cause congestion but would best be handled by specific traffic management plans for each of the events.

4.7 Summary and Next Steps

This Technical Memorandum No. 4 provides a comprehensive assessment of future intersection operating conditions. The key findings of this study are summarized below.

- Bard College's Master Plan proposes adding dormitory space to meet current student housing demand which will allow students residing off-campus to relocate to the campus. The dormitory expansion and other anticipated actions are not expected to result in an increase in traffic volumes.
- Six major developments are proposed in the Town of Red Hook and Village of Red Hook, mostly remote from the study area.
- No major projects are currently proposed in the Village of Tivoli.
- Traffic growth in the study area is projected to increase by up to 9 percent from 2015 to 2025, representing less than one percent growth per year.
- For this study, the existing traffic volumes were increased by 18 percent, representing a very conservative approach.
- Intersection capacity analyses indicate that, in the year 2025, all of the intersections within the study area will experience good levels of service during peak hours, which indicates that the capacity of the corridors will considerably exceed future peak vehicular demand.

The next steps in the CMP will be to prepare Technical Memorandum No. 5, which will include a series of proposed transportation-related strategies to mitigate safety deficiencies, followed by an Advisory Committee meeting and a Public Workshop to review the proposed improvement strategies. Following the input received at the meeting and workshop, a final report will be prepared (Upper Route 9G Final Report) to include specific recommendations for corridor and intersection safety improvements.

Appendix

2013 Major Projects Report

2013
Major Projects Report

PDCTC

Poughkeepsie-Dutchess County Transportation Council

Dutchess County Department of Planning and Development

2013
Major Projects Report

Dutchess County Department of Planning and Development
Poughkeepsie-Dutchess County Transportation Council

The preparation of this report has been financed in part through grant[s] from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 [or Metropolitan Planning Program, Section 104(f)] of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.

Acknowledgements

This study was prepared by the Dutchess County Department of Planning and Development for the Poughkeepsie-Dutchess County Transportation Council.

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Major Projects Report Overview

The annual Major Projects Report is a compilation of selected information about development projects proposed in Dutchess County (as of December 2013). This report is designed to identify economic activity throughout Dutchess County and provide local officials with information on proposed developments affecting their communities and their decisions. The information in the report can be used not only by public officials, but also by the general public and the private sector to plan development activities.

Many of these projects are in the early stages of the planning and approval process, and all projects stay in the report until they are either fully constructed[1], withdrawn by the sponsor, denied by the municipality, or not resubmitted following approval expiration. During the planning and design process, projects may be downsized and may therefore be removed from the report because they no longer meet the criteria for a major project (see *Criteria for Inclusion in Major Projects Report* on page 3). For the actual project status at a particular time, the local municipality which has review and approval authority should be contacted (see Appendix for list of municipal phone numbers on page 25). Being listed in the report does not imply approval of a project by the Poughkeepsie-Dutchess County Transportation Council or the Dutchess County Department of Planning and Development.

The Major Projects Report is a planning tool. It is not a list of projects that will definitely be constructed, but rather a list of proposed projects that may someday be completed.

Parcel Data Available Online

Citizens and government officials alike can view specific tax parcel information online at the County's website (visit www.dutchessny.gov). This free service, entitled *"Parcel Access",* includes the following information:

- Assessment data
- Parcel search capabilities
- Aerial orthophoto backdrop
- Easy-to-use mapping layers
- Print option

Methodology

To complete this update, each municipal planning board was asked to review the listing of active major projects and update the information for their community. County Planning Department staff also gathered information from municipal zoning referrals, environmental review documents, meeting minutes, and newspaper articles.

The report includes: the location of the project (tax parcel designation and access road); the general nature of the project (e.g., office development, apartments, or infrastructure improvement); and the scale of the project as reflected by the number of dwelling units, the square footage, and/or the acreage. Complete information on a particular project may not be available when it is listed on the report. The resulting list is the best available information at this time on the projects that meet the criteria of the Major Projects Report (see *Criteria for Inclusion in Major Projects Report* on page 3).

Some projects may cross municipal boundaries, and are listed under each municipality involved. Also, many projects have both residential and non-residential components. This list breaks each project down into the separate components, but each component shares the same map number. In these cases, the project is still only counted as one project.

[1] *Starting in 2013, any single-family residential subdivision that has been in the Report for 10 or more years AND is also at least 75% built out is now considered "constructed" and will be removed from the Report accordingly.*

Summary of 2013 Data

As of December 2013, there are 138 separate projects listed (some projects have both residential and non-residential components – see Table 5 for more information.). This includes:

- 87 residential proposals with a total of 12,155 proposed housing units (a 21.6% decrease in the number of units from last year, which included 15,513 housing units);
- 81 non-residential proposals with a total of 6,892,707 square feet (a 3.2% decrease in square footage from last year, which included 84 projects and 7,119,189 square feet);
- 7 rezoning proposals.

The 2013 Major Projects update involves the following additions and deletions (see Tables 3 and 4):

- 18 new projects were added to the report.
- 50 projects were removed from the report, as follows (one project is counted twice – it had two components, one of which was constructed while the approval expired for the other):
    - 28 projects were completed (constructed or rezoned);
    - 11 projects were withdrawn;
    - 8 projects were reduced below the size threshold for Major Projects;
    - 3 projects had approvals that expired;
    - 1 project was denied/revoked by the municipality.

Both the southern and middle portions of the county continue to see higher numbers of development proposals, though less so than typically seen in the past. In terms of residential development, the towns of Dover, East Fishkill, Hyde Park, and LaGrange each have over 1,000 proposed housing units, with a combined total of 6,614 units. These four towns alone account for over 54% of all units proposed in Dutchess County for projects meeting the Major Projects criteria.

Also notable is the number of non-senior apartments, condos, and townhouses that are proposed throughout the county. Of those projects that have defined the number of units expected, at least 5,893 non-senior apartments, condos, and townhouses are proposed. This accounts for over 48% of all proposed housing units on the list. Of these non-senior apartments/condos/townhouses, 118 units involve income restrictions and are considered affordable/workforce housing.

A significant number of senior housing units are also proposed – 2,005 – most of which are apartments, townhouses, and condominiums. Of those, 356 units are considered affordable senior housing.

Non-residential development proposals are also concentrated in the southern and middle parts of the county. The towns of East Fishkill and Hyde Park lead with a combined total of over 3.9 million square feet proposed. In addition, the towns of Dover, Fishkill, LaGrange, Pawling, and Poughkeepsie each have more than 200,000 square feet of non-residential space proposed.

Although the Major Projects Report is generally intended to track new construction, some projects that represent a significant change in the use of existing structures are included. Currently, this report includes five such projects:

1. Hudson River Psychiatric Center: The redevelopment of the Hudson River Psychiatric Center into housing and commercial space in the Town of Poughkeepsie;
2. Knolls of Dover/Olivet Center: Several buildings on the former Harlem Valley Psychiatric Center site are being incorporated into the Knolls of Dover mixed-use project and/or Olivet Center.
3. Linuo Solar: The IBM West Campus in East Fishkill has been purchased by a Chinese company, Linuo Solar, for a possible solar manufacturing facility.

4. Dutchess Marketplace: The former Jamesway store at the Dutchess Mall in Fishkill has been turned into a year-round indoor flea market.
5. Hyde Park Assisted Living Facility: The former Hoe Bowl on Route 9G in Hyde Park has approvals to be converted into a 76-bed assisted living facility.

Access Roads

Dutchess County, like other areas throughout the country, experiences the greatest amount of commercial and residential development along major transportation routes. This linear pattern of development, commonly called "strip development," greatly affects the efficiency of roads. Commercial strips can create traffic congestion, reduce the capacity of roads to move through-traffic efficiently, and cause safety problems. It also takes business away from "downtown" districts and can be visually unpleasant.

Table 6 lists major projects organized by primary access routes. Since 1990 when this report began listing major projects by primary access road, US Route 9, especially south of Poughkeepsie, has experienced the most development activity and is the most firmly established "strip development" corridor in Dutchess County.

The spread of commercial and residential development into rural areas has put many primary access roads at risk for new or increased strip development. Looking at past growth patterns and current development proposals, the following corridors may experience diminished operations due to strip development: NY 22 in the Harlem Valley, NY 52, 9D, and 82 in southern Dutchess, US 44 in the towns of Poughkeepsie and Pleasant Valley, NY 9G in Hyde Park, and NY 55 in LaGrange.

There is no simple or easy solution to this problem, but with the implementation of comprehensive design controls, new development can be integrated with the surrounding community environments. Local decision-makers should be aware of the potential for strip development in order to better protect their communities from this undesirable land use. There are many design guidebooks available that local decision-makers can use in their planning process. They can also contact the Dutchess County Department of Planning and Development for assistance.

Criteria for Inclusion in Major Projects Report

The report focuses on those proposed projects that could have significant impacts on the area. It would be cumbersome to track every project that has been proposed in the county: only projects meeting a certain criteria are included. The thresholds that have been established are listed below.

For urban municipalities (cities of Beacon and Poughkeepsie; towns of Beekman*, East Fishkill, Fishkill, Hyde Park, LaGrange, Poughkeepsie and Wappinger; villages of Fishkill, Pawling*, and Wappingers Falls):

25 residential dwelling units; or
25,000 square feet of non-residential gross floor area; or
Rezoning of an area which exceeds 10 acres.

**The Town of Beekman and Village of Pawling experienced population increases as per the 2010 Census. They now meet the criteria for an "urban" municipality. To accurately reflect this new status, any Major Project listed in previous reports that now falls below the urban threshold has been removed from the report.*

For rural municipalities (towns of Amenia, Clinton, Dover, Milan, North East, Pawling, Pine Plains, Pleasant Valley, Red Hook, Rhinebeck, Stanford, Union Vale, and Washington; villages of Millbrook, Millerton, Red Hook, Rhinebeck, and Tivoli):

10 residential dwelling units; or
10,000 square feet of non-residential gross floor area; or
Rezoning of an area which exceeds 25 acres.

While this report covers projects that meet these thresholds, it does not reflect the cumulative effects of smaller projects which are not included.

Description of Report Components

The following description of the report elements can be used to interpret the data in the tables.

PID: The Project Identification Number is the numerical key to locating projects on the Major Projects map, which is located at the end of the report.

Municipality: The municipality in which the project is located. The municipality may be a town (T), city (C), or village (V).

Project: The title or most recognized reference name of the proposed project.

Applicant: The name of the applicant, or the applicant's representative.

Access Road: The road which provides primary access to the property. For example,

I = Interstate
US = US Route
NY = State Route
CR = County Route

Local Roads = the name of the road and one of the following abbreviations:

Ave. = Avenue	Ct. = Court	Pl. = Place
Blvd. = Boulevard	Dr. = Drive	Rd. = Road
Cir. = Circle	Ln. = Lane	St. = Street

The exceptions to this are highway segments which have dual numbers such as US44/NY55 in the City of Poughkeepsie. In these cases, the smaller number shall be indicated first. The sole exception is State Road 987G, which is known as the Taconic State Parkway, and may be referred to as the TSP in this report. Dual roads are as follows:

NY 9G/199	NY 82/199	US 44/NY 55
NY 22/55	NY 82/376	US 44/NY 82
NY 22/343	US 44/NY 22	

Parcel: The county real property tax number. A "+" sign shown in the column following the parcel number indicates that the project involves more parcels than the single parcel identified.

Activity: The general type of project, as follows:

Residential:

Apt =	Apartments
Condo/TH =	Condominium, Townhouse, Cooperative, Cluster
Dorm =	Dormitory
Mobile =	Mobile Home Park
SFR =	Single Family Residential

Where applicable, the following project restrictions are indicated on tables 5 and 6:

Senior = Age-Restricted (55+) Housing
Aff = Affordable Housing (income restricted)

Non-Residential:

Agri-bus = Agri-business
Assist = Assisted Living
Hosp/Med = Hospital or other Medical Facility
Hotel = Hotel/Motel
Indust = Industrial
Infra = Infrastructure
Nursing = Nursing Home
Office = Office
Open Sp = Preserved Open Space
Pub/Inst = Public/Institutional
Rec = Recreation
Retail = Retail/Restaurant
Rezone = Rezoning

 # Units: The number of units in proposed residential projects. For Dorm, Hotel, and Assisted Living projects, this represents the number of beds (unit counts for Hotel and Assisted Living projects are not included in residential unit totals).

Sq. Feet: The square footage of gross floor area, as applicable, in proposed projects.

 # Acres: The total site acreage, as applicable, in proposed projects.

Entry: The month and year that the information on the proposed project was entered in the report by the Department of Planning and Development.

Conclusion

The Major Projects Report is a tool that can give local decision-makers an idea of the development that is or may be occurring in the county. With this information, they may be able to get a broader view of the impacts a single development may cause and consider those impacts in their approval processes. The Major Projects Report can also be used by developers to determine possible competition or general trends in the local economy.

The Dutchess County Department of Planning and Development will continue to track development in the county and contact the local municipalities to verify information in order to provide the most accurate report possible. If you have any suggestions for making this information more useful to you, please write or call the Department of Planning and Development with your suggestions.

Dutchess County Department of Planning and Development
27 High Street
Poughkeepsie, NY 12601
845-486-3600
plandev@dutchessny.gov

Table 5

2013 Active Major Projects

By Municipality

PID	Municipality	Project	Applicant	Access Road	Parcel[1]	[2]	Activity	Restrictions[3]	# Units	Sq.Ft.	# Acres	Entry
524	T Pawling	Castagna Park	Jucca/Kearney Group	Aikendale Rd.	7056-00-611351	+	Retail			200,000	202	8/1995
697	T Pawling	Cushman Farms Subdivision	Peckham Industries, Inc.	Cushman Rd.	6955-00-795864		SFR		30		15	8/2001
901	T Pawling	Madison Woods Subdivision	Andriano	Dodge Rd.	6957-00-595634	+	SFR		34		193	5/2006
746	T Pawling	Medical Office Building	Papaleo	NY 22	7055-00-451704		Med			15,000	2	2/2003
771	T Pawling	The Meadows at Pawling (f. Estates@MisnHills)	Lazar/Deerfield Estates, LLC	CR 20	7057-00-094957	+	OpenSp				63	12/2013
771	T Pawling	The Meadows at Pawling (f. Estates@MisnHills)	Lazar/Deerfield Estates, LLC	CR 20	7057-00-094957	+	SFR	Senior, Aff	42		63	8/2003
1074	T Pine Plains	Dutch's Spirits -- Distillery & Museum	Dutch's Spirits	Ryan Rd.	6872-00-005780	+	Agri-bus					11/2013
791	T Pine Plains	The Hudson Valley Club (Carvel Property)[5]	1133 Taconic, LLC	Ferris Ln.	6672-00-359795	+	Rec				2,375	8/2003
791	T Pine Plains	The Hudson Valley Club (Carvel Property)[5]	1133 Taconic, LLC	Ferris Ln.	6672-00-359795	+	SFR	Aff	88		2,375	3/2012
791	T Pine Plains	The Hudson Valley Club (Carvel Property)[5]	1133 Taconic, LLC	Ferris Ln.	6672-00-359795	+	SFR		554		2,375	8/2003
787	T Pine Plains	Towne Center at Pine Plains (f. Stissing Farm Dev)	Stissing Farms, Inc.	NY 199	6872-14-299291	+	Condo/TH	Senior	49		15	8/2003
787	T Pine Plains	Towne Center at Pine Plains (f. Stissing Farm Dev)	Stissing Farms, Inc.	NY 199	6872-14-299291	+	Office			5,000	15	8/2003
787	T Pine Plains	Towne Center at Pine Plains (f. Stissing Farm Dev)	Stissing Farms, Inc.	NY 199	6872-14-299291	+	Retail			5,000	15	8/2003
1044	T Pleasant Valley	Dutchess Quarry	Pekham Industries	CR 72	6464-03-187469		Indust			10,000	44	12/2012
983	T Pleasant Valley	Professional Bldg	Gasparro	US 44	6363-00-430190	+	Office			10,000	4	10/2008
940	T Pleasant Valley	Salt & Highway Equipment Storage	Town of Pleasant Valley	CR 73	6364-04-803085	+	Indust			18,000	8	11/2006
790	T Pleasant Valley	Taconic Homes	Richman Group Capital Co	US 44	6564-02-529760		Condo/TH		252		72	8/2003
1042	T Poughkeepsie	Ambassador Town Square	R&D Hotel, LLC	US 9	6060-02-950800		Hotel			38,550	17	11/2012
1042	T Poughkeepsie	Ambassador Town Square	R&D Hotel, LLC	US 9	6060-02-950800		Retail			8,417	17	11/2012
804	T Poughkeepsie	Casperkill Country Club	Ginsburg Development LLC	US 9	6159-02-503995	+	Condo/TH		280		346	8/2004
804	T Poughkeepsie	Casperkill Country Club	Ginsburg Development LLC	US 9	6159-02-503995	+	SFR		185		346	8/2004
1039	T Poughkeepsie	Emeritus at Poughkeepsie	Wegman Companies, Inc.	NY 113	6260-03-049464		Assist			68,000	27	5/2012
776	T Poughkeepsie	Guardian Self-Storage Facility	Redl	Love Rd.	6261-01-173893		Indust			71,200	6	8/2003
947	T Poughkeepsie	Industrial Retro / Kirchhoff	Industrial Retro / Kirchhoff	US 44	6262-04-830160		Office			28,000	58	2/2007
947	T Poughkeepsie	Industrial Retro / Kirchhoff	Industrial Retro / Kirchhoff	US 44	6262-04-830160		Office			26,620	58	2/2007
1036	T Poughkeepsie	Marist College Student Center Music Addition	Marist College	US 9	6062-02-884713		Pub/Inst			25,000	42	2/2012
1010	T Poughkeepsie	Neptune Commerce Center	Neptune Capital Investors	US 9	6159-01-154907	+	Retail			2,767	9	12/2013
982	T Poughkeepsie	One Dutchess Avenue (Dutton)[4]	O'Neill-Group Dutton, LLC	Dutchess Ave.	6062-59-763508	+						10/2008
1029	T Poughkeepsie	River Point Resid & West Park Professional Bldgs	W.A. Route 9, LLC	US 9	6159-03-365369	+	Apt	Senior	85		7	10/2011
1029	T Poughkeepsie	River Point Resid & West Park Professional Bldgs	W.A. Route 9, LLC	US 9	6159-03-365369	+	Med			31,534	7	10/2011
1029	T Poughkeepsie	River Point Resid & West Park Professional Bldgs	W.A. Route 9, LLC	US 9	6159-03-365369	+	Office			13,976	7	10/2011
986	T Poughkeepsie	Route 9D Professional Park	Socker Spring Park, LLC	NY 9D	6158-01-390820		Office			41,520	4	10/2008
155	T Poughkeepsie	Stratford Farms	Bower Rd. Associates	Bower Rd.	6362-01-200995		SFR		134		91	5/1986
1040	T Poughkeepsie	Stratford Farms Townhouses	ABD Stratford, LLC	Bower Rd.	6362-01-320922	+	Condo/TH		26		91	5/2012
757	T Poughkeepsie	The Gables - Phase IV	Redl	NY 115	6262-02-054988	+	Mobile		49		24	2/2003
1030	T Poughkeepsie	Vassar College Science Building	Vassar College	NY 376	6261-03-100450		Pub/Inst			82,000	310	10/2011
668	T Red Hook	Anderson Commons[6]	Kearney Property, Inc.	Fisk St.	6272-00-460370	+	Condo/TH		24		63	8/2000
668	T Red Hook	Anderson Commons[6]	Kearney Property, Inc.	Fisk St.	6272-00-460370	+	SFR		28		63	Jan-13
1046	T Red Hook	Hoffman Traditional Neighborhood Devel. (TND)	Kirchhoff Properties, LLC	Old Farm Rd.	6272-00-204261	+	Condo/TH		48		53	12/2012
1046	T Red Hook	Hoffman Traditional Neighborhood Devel. (TND)	Kirchhoff Properties, LLC	Old Farm Rd.	6272-00-204261	+	OpenSp		0		53	12/2012
1046	T Red Hook	Hoffman Traditional Neighborhood Devel. (TND)	Kirchhoff Properties, LLC	Old Farm Rd.	6272-00-204261	+	SFR		48		53	12/2012
997	T Red Hook	Preserve at Lakes Kill (f. Oaks at Landskill)	Landmark Properties of Suffolk, Ltd.	Feller Nwmrk Rd.	6373-00-790095	+	SFR		11		93	1/2009

Table 5

2013 Active Major Projects

By Municipality

PID	Municipality	Project	Applicant	Access Road	Parcel[1]	[2]	Activity	Restrictions[3]	# Units	Sq.Ft.	# Acres	Entry
1034	T Rhinebeck	Gardens at Rhinebeck, Phase III	Rhinebeck Gardens Group	Garden Way	6170-04-010475		Condo/TH		92		23	12/2011
975	T Rhinebeck	Grasmere Farm Hotel	Mensch Grasmere, LLC	US 9	6169-00-451779	+	Hotel			16,000		7/2013
975	T Rhinebeck	Grasmere Farm Hotel	Mensch Grasmere, LLC	US 9	6169-00-451779	+	Retail			25,000		7/2013
1048	T Rhinebeck	Stanford Machine	Stanford Machine	NY 9G	6171-00-860700		Indust			39,000	130	12/2012
1061	T Stanford	Millbrook School Dormitory	Millbrook School	Millbrook School	6967-00-385632		Apt		4			5/2013
1061	T Stanford	Millbrook School Dormitory	Millbrook School	Millbrook School	6967-00-385632		Dorm		44			5/2013
1028	T Union Vale	East Mountain North Subdivision	Leonard, Habiague, Dryfoos	CR 21	6860-00-400970	+	SFR		20		526	10/2011
968	T Wappinger	BAC Properties - Construction Of Bldg #1	Bac Properties, LLC	Airport Dr.	6259-00-783320		Indust			30,000	10	1/2008
922	T Wappinger	DCH Toyota -- Service Center	DCH Investments, Inc.	Old Route 9	6157-02-553706		Retail			37,747	4	9/2006
934	T Wappinger	Degnan Retail Center	Degnan	US 9	6158-02-543530		Retail			34,500	9	11/2006
778	T Wappinger	La Fonda Del Sol	Rodriguez	CR 28	6157-02-542585		Office			37,800	7	8/2003
778	T Wappinger	La Fonda Del Sol	Rodriguez	CR 28	6157-02-542585		Retail				7	8/2003
1011	T Wappinger	Regency at Wappinger (f. Hilltop Village)	Toll Brothers/Contrail LLC	CR 94	6257-02-630770		Condo/TH	Senior	93		147	6/2010
1011	T Wappinger	Regency at Wappinger (f. Hilltop Village)	Toll Brothers/Contrail LLC	CR 94	6257-02-630770		SFR	Senior	132		147	6/2010
819	T Wappinger	The Preserve	Prime Equities LLC	CR 28	6157-01-240641	+	Condo/TH		53		49	8/2004
1051	V Fishkill	Jackson Crossing	Jackson Crossing, LLC	Jackson St	6155-07-685931	+	Apt		9			10/2013
1051	V Fishkill	Jackson Crossing	Jackson Crossing, LLC	Jackson St	6155-07-685931	+	Condo/TH		18			10/2013
1051	V Fishkill	Jackson Crossing	Jackson Crossing, LLC	Jackson St	6155-07-685931	+	SFR		1			10/2013
668	V Red Hook	Anderson Commons[6]	Kearney Property, Inc.	Fisk St.	6272-11-619615	+						8/2000
865	V Red Hook	Knollwood Commons	Knollwood Commons III	Firehouse La.	6272-10-348532		Retail			7,200	4	8/2005
814	V Red Hook	Red Hook Commons	Kearney Realty & Dev	US 9	6272-10-265576	+	Retail				20	8/2004
1062	V Rhinebeck	Northern Dutchess Hospital Expansion	Kirchhoff Medical Properties	US 9	6170-10-429525	+	Med			87,000		6/2013
1064	V Rhinebeck	Rhinebeck Village Place	Mirbeau of Rhinebeck, LLC	NY 308	6170-18-387184		Hotel			40,223		9/2013
1064	V Rhinebeck	Rhinebeck Village Place	Mirbeau of Rhinebeck, LLC	NY 308	6170-18-387184		Retail					11/2013
1003	V Wappingers Falls	Commercial/Residential Building	Dookie	NY 9D	6158-14-267303		Apt		10		1	9/2009
1003	V Wappingers Falls	Commercial/Residential Building	Dookie	NY 9D	6158-14-267303		Retail				1	9/2009
1014	V Wappingers Falls	Creekside Springs	Creekside Springs, LLC	Franklindale Ave.	6158-17-181079		Apt		44		4	9/2010
995	V Wappingers Falls	Riverbend II	Sterling Properties Group	CR 93	6158-20-779013		Apt		54		9	12/2008

[1] Specific parcel information is available for review online via "Parcel Access" at www.dutchessny.gov

[2] A "+" indicates that the project involves more parcels than the single parcel identified.

[3] Where indicated, the following project restricitions apply:

Senior = Age-Restricted (55+) Housing

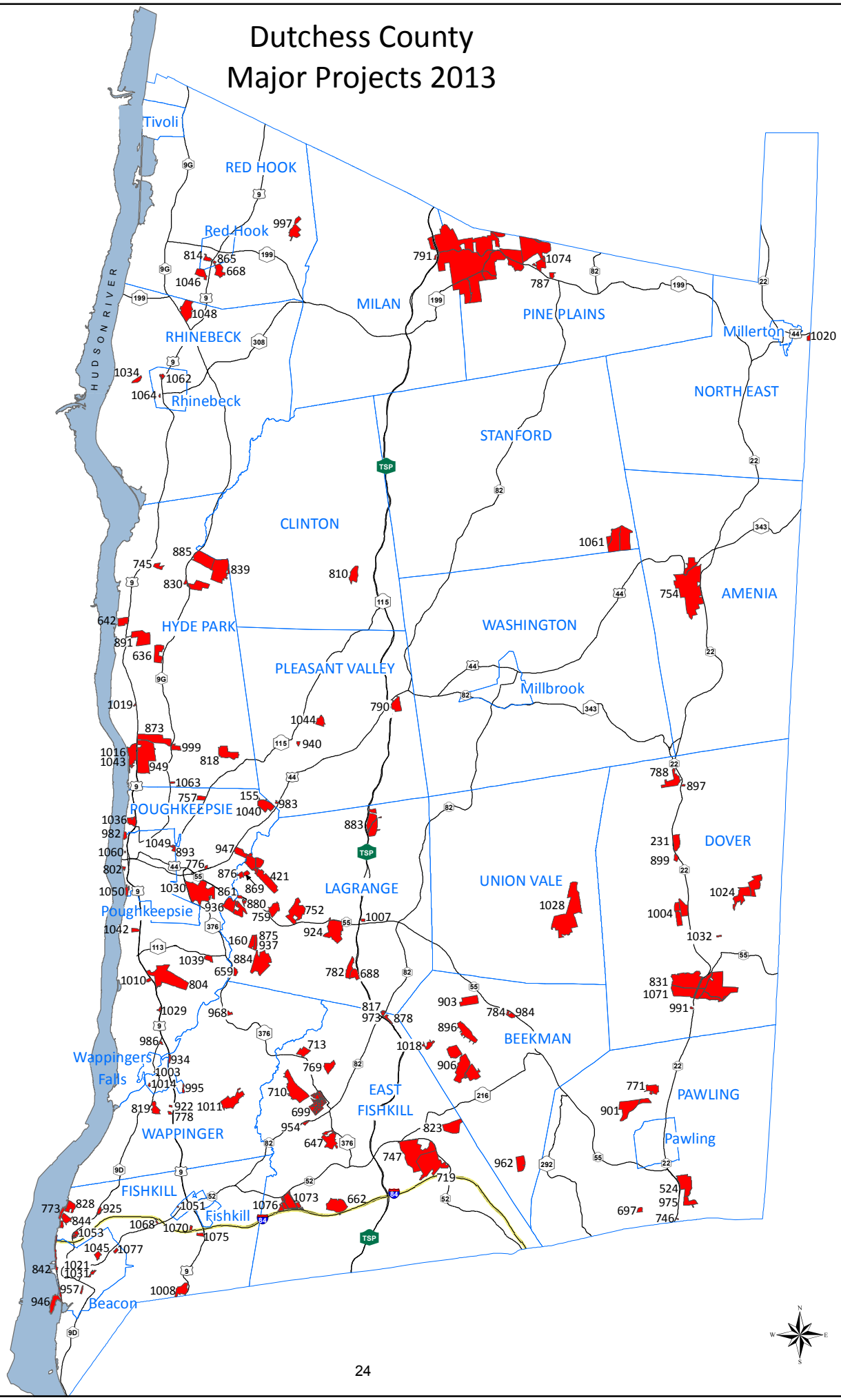
Aff = Affordable Housing (income restricted)

[4] One Dutchess Avenue (Dutton) spans 2 municipalities – the City of Poughkeepsie and the Town of Poughkeepsie. Project components are listed in the City of Poughkeepsie entry.

[5] The Hudson Valley Club (Carvel Property Development) spans 2 municipalities – the Town of Pine Plains and the Town of Milan. Project components are listed in the Town of Pine Plains entry.

[6] Anderson Commons spans 2 municipalities – the Town and Village of Red Hook. Project components are listed in the Town of Red Hook entry.

Dutchess County
Major Projects 2013



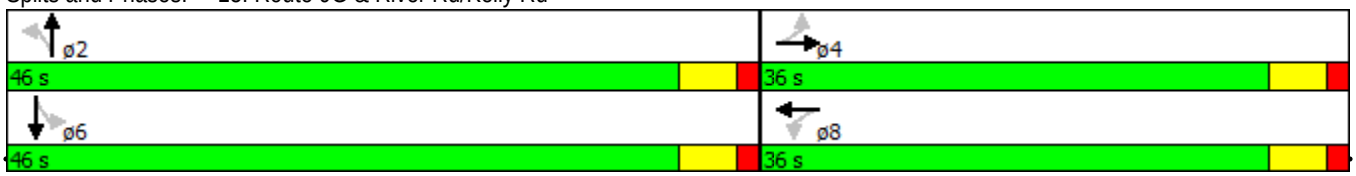
Appendix

Synchro Reports

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	12	12	27	105	50	8	80	207	65	0	294	13
Satd. Flow (prot)	0	1727	0	0	1808	0	0	1796	0	0	1799	0
Flt Permitted		0.922			0.770			0.852				
Satd. Flow (perm)	0	1611	0	0	1437	0	0	1547	0	0	1799	0
Satd. Flow (RTOR)		31			4			20			4	
Confl. Bikes (#/hr)						1						
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	5%	5%	5%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	59	0	0	185	0	0	400	0	0	349	0
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Total Split (s)	36.0	36.0		36.0	36.0		46.0	46.0		46.0	46.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Act Effct Green (s)		13.6			13.6			44.4			44.4	
Actuated g/C Ratio		0.20			0.20			0.65			0.65	
v/c Ratio		0.17			0.64			0.39			0.30	
Control Delay		13.2			33.8			7.4			6.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		13.2			33.8			7.4			6.6	
LOS		B			C			A			A	
Approach Delay		13.2			33.8			7.4			6.6	
Approach LOS		B			C			A			A	
Queue Length 50th (ft)		9			65			60			51	
Queue Length 95th (ft)		33			119			135			111	
Internal Link Dist (ft)		240			215			5002			3600	
Turn Bay Length (ft)												
Base Capacity (vph)		754			659			1016			1175	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.08			0.28			0.39			0.30	

Intersection Summary			
Cycle Length: 82			
Actuated Cycle Length: 68			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 12.4		Intersection LOS: B	
Intersection Capacity Utilization 63.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 15: Route 9G & River Rd/Kelly Rd

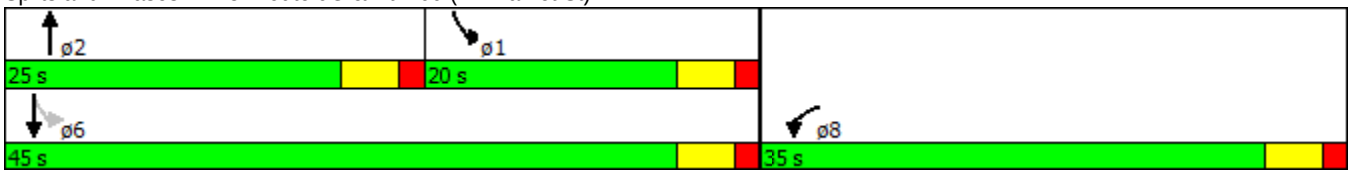


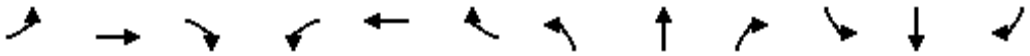
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	199	98	275	112	57	360
Satd. Flow (prot)	1657	0	1810	1538	1736	1827
Flt Permitted	0.968				0.522	
Satd. Flow (perm)	1657	0	1810	1538	954	1827
Satd. Flow (RTOR)	36			123		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	6%	6%	5%	5%	4%	4%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	327	0	302	123	63	396
Turn Type	Prot		NA	Free	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases				Free	6	
Total Split (s)	35.0		25.0		20.0	45.0
Total Lost Time (s)	5.0		5.0		5.0	5.0
Act Effct Green (s)	17.2		29.5	68.3	41.1	41.1
Actuated g/C Ratio	0.25		0.43	1.00	0.60	0.60
v/c Ratio	0.74		0.39	0.08	0.09	0.36
Control Delay	30.8		20.4	0.1	7.9	9.2
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	30.8		20.4	0.1	7.9	9.2
LOS	C		C	A	A	A
Approach Delay	30.8		14.5			9.0
Approach LOS	C		B			A
Queue Length 50th (ft)	109		103	0	10	74
Queue Length 95th (ft)	189		206	0	31	165
Internal Link Dist (ft)	944		517			5002
Turn Bay Length (ft)				450	200	
Base Capacity (vph)	750		780	1538	745	1098
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.44		0.39	0.08	0.08	0.36

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 68.3
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 16.8 — Intersection LOS: B
Intersection Capacity Utilization 47.3% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 18: Route 9G & Rt. 199 (W. Market St)

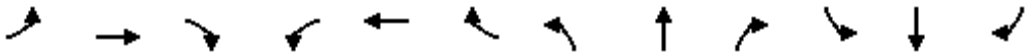




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	7	92	6	6	67	18	17	6	7	18	5	7
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	8	105	7	7	76	20	19	7	8	20	6	8

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	119	103	34	34
Volume Left (vph)	8	7	19	20
Volume Right (vph)	7	20	8	8
Hadj (s)	0.13	-0.02	0.04	0.05
Departure Headway (s)	4.3	4.2	4.5	4.5
Degree Utilization, x	0.14	0.12	0.04	0.04
Capacity (veh/h)	818	844	757	751
Control Delay (s)	8.0	7.7	7.7	7.7
Approach Delay (s)	8.0	7.7	7.7	7.7
Approach LOS	A	A	A	A

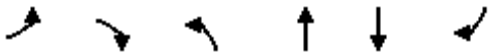
Intersection Summary			
Delay	7.8		
Level of Service	A		
Intersection Capacity Utilization	23.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	12	14	97	32	21	13	45	152	18	12	248	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	13	15	104	34	23	14	48	163	19	13	267	10
Pedestrians								2				
Lane Width (ft)								10.0				
Walking Speed (ft/s)								4.0				
Percent Blockage								0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	592	577	274	681	572	173	276			183		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	592	577	274	681	572	173	276			183		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	96	86	88	94	98	96			99		
cM capacity (veh/h)	370	398	748	293	410	870	1269			1380		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	132	71	231	289
Volume Left	13	34	48	13
Volume Right	104	14	19	10
cSH	623	376	1269	1380
Volume to Capacity	0.21	0.19	0.04	0.01
Queue Length 95th (ft)	20	17	3	1
Control Delay (s)	12.3	16.8	1.9	0.4
Lane LOS	B	C	A	A
Approach Delay (s)	12.3	16.8	1.9	0.4
Approach LOS	B	C		

Intersection Summary				
Average Delay	4.7			
Intersection Capacity Utilization	44.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	1	28	18	217	387	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	31	20	241	430	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	712	431	431			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	712	431	431			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	100	95	98			
cM capacity (veh/h)	389	620	1107			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	32	261	431
Volume Left	1	20	0
Volume Right	31	0	1
cSH	608	1107	1700
Volume to Capacity	0.05	0.02	0.25
Queue Length 95th (ft)	4	1	0
Control Delay (s)	11.3	0.8	0.0
Lane LOS	B	A	
Approach Delay (s)	11.3	0.8	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	208	1	44	387	5	33
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	221	1	47	412	5	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			222		727	222
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			222		727	222
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		99	96
cM capacity (veh/h)			1335		376	815

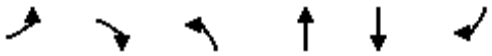
Direction, Lane #	NB 1	SB 1	NW 1
Volume Total	222	459	40
Volume Left	0	47	5
Volume Right	1	0	35
cSH	1700	1335	707
Volume to Capacity	0.13	0.04	0.06
Queue Length 95th (ft)	0	3	5
Control Delay (s)	0.0	1.1	10.4
Lane LOS		A	B
Approach Delay (s)	0.0	1.1	10.4
Approach LOS			B

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	6	8	7	17	1	14	179	1	2	320	65
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	21	6	8	7	18	1	15	186	1	2	333	68
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	597	588	367	599	621	187	401			188		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	597	588	367	599	621	187	401			188		
tC, single (s)	7.3	6.7	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.2	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	98	99	98	96	100	99			100		
cM capacity (veh/h)	370	391	678	402	400	860	1152			1375		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	35	26	202	403
Volume Left	21	7	15	2
Volume Right	8	1	1	68
cSH	419	409	1152	1375
Volume to Capacity	0.08	0.06	0.01	0.00
Queue Length 95th (ft)	7	5	1	0
Control Delay (s)	14.4	14.4	0.7	0.1
Lane LOS	B	B	A	A
Approach Delay (s)	14.4	14.4	0.7	0.1
Approach LOS	B	B		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	1	0	17	198	303	28
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	0	18	215	329	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	597	345	360			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	597	345	360			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	98			
cM capacity (veh/h)	462	703	1193			

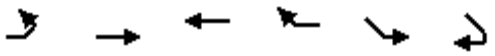
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	1	234	360
Volume Left	1	18	0
Volume Right	0	0	30
cSH	462	1193	1700
Volume to Capacity	0.00	0.02	0.21
Queue Length 95th (ft)	0	1	0
Control Delay (s)	12.8	0.8	0.0
Lane LOS	B	A	
Approach Delay (s)	12.8	0.8	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	34.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (veh/h)	76	19	0	22	26	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	83	21	0	24	28	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			103		117	93
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			103		117	93
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	100
cM capacity (veh/h)			1489		879	964

Direction, Lane #	NB 1	SB 1	SW 1
Volume Total	103	24	28
Volume Left	0	0	28
Volume Right	21	0	0
cSH	1700	1489	879
Volume to Capacity	0.06	0.00	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	9.2
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	15.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (veh/h)	0	19	26	117	32	0
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	21	28	127	35	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			320			
pX, platoon unblocked						
vC, conflicting volume	155				112	92
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	155				112	92
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	100
cM capacity (veh/h)	1425				884	966

Direction, Lane #	EB 1	WB 1	SE 1
Volume Total	21	155	35
Volume Left	0	0	35
Volume Right	0	127	0
cSH	1700	1700	884
Volume to Capacity	0.01	0.09	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	0.0	9.2
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	18.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Volume (veh/h)	1	116	32	21	77	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	126	35	23	84	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	176	84	84			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	176	84	84			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	87	98			
cM capacity (veh/h)	795	976	1513			

Direction, Lane #	WB 1	SE 1	NW 1
Volume Total	127	58	84
Volume Left	1	35	0
Volume Right	126	0	0
cSH	974	1513	1700
Volume to Capacity	0.13	0.02	0.05
Queue Length 95th (ft)	11	2	0
Control Delay (s)	9.3	4.6	0.0
Lane LOS	A	A	
Approach Delay (s)	9.3	4.6	0.0
Approach LOS	A		

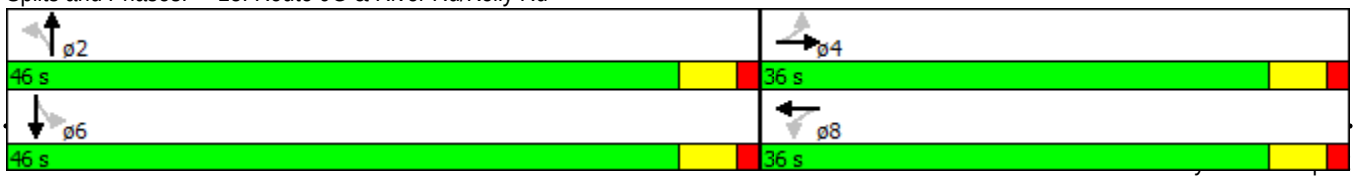
Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	23.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	18	57	126	55	25	1	42	353	98	6	314	18
Satd. Flow (prot)	0	1659	0	0	1815	0	0	1805	0	0	1830	0
Flt Permitted		0.962			0.519			0.951			0.993	
Satd. Flow (perm)	0	1602	0	0	974	0	0	1724	0	0	1819	0
Satd. Flow (RTOR)		119			1			22			5	
Confl. Peds. (#/hr)	1					1						
Confl. Bikes (#/hr)			1			1						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	3%	3%	1%	1%	1%	2%	2%	2%	3%	3%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	212	0	0	85	0	0	519	0	0	356	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Total Split (s)	36.0	36.0		36.0	36.0		46.0	46.0		46.0	46.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Act Effct Green (s)		9.6			9.6			43.6			43.6	
Actuated g/C Ratio		0.15			0.15			0.69			0.69	
v/c Ratio		0.62			0.57			0.43			0.28	
Control Delay		19.2			38.8			6.1			5.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		19.2			38.8			6.1			5.0	
LOS		B			D			A			A	
Approach Delay		19.2			38.8			6.1			5.0	
Approach LOS		B			D			A			A	
Queue Length 50th (ft)		31			29			63			39	
Queue Length 95th (ft)		87			67			152			94	
Internal Link Dist (ft)		240			215			5002			3600	
Turn Bay Length (ft)												
Base Capacity (vph)		848			479			1195			1255	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.25			0.18			0.43			0.28	

Intersection Summary

Cycle Length: 82
Actuated Cycle Length: 63.3
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 10.5 — Intersection LOS: B
Intersection Capacity Utilization 77.0% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 15: Route 9G & River Rd/Kelly Rd

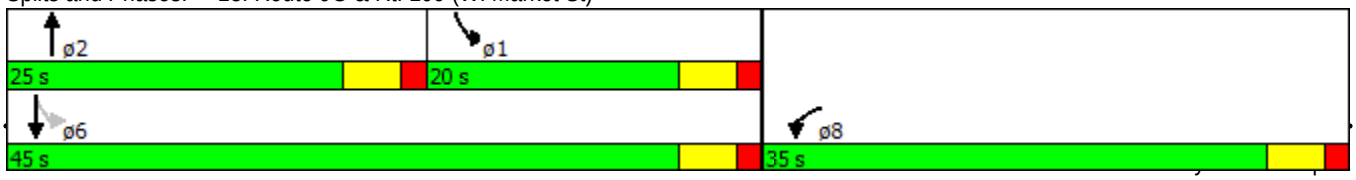


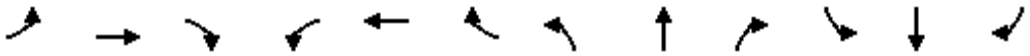
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	203	107	385	234	133	362
Satd. Flow (prot)	1718	0	1863	1583	1752	1845
Flt Permitted	0.968				0.380	
Satd. Flow (perm)	1718	0	1863	1583	701	1845
Satd. Flow (RTOR)	38			252		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	2%	3%	3%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	333	0	414	252	143	389
Turn Type	Prot		NA	Free	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases				Free	6	
Total Split (s)	35.0		25.0		20.0	45.0
Total Lost Time (s)	5.0		5.0		5.0	5.0
Act Effct Green (s)	16.7		24.6	67.0	40.2	40.2
Actuated g/C Ratio	0.25		0.37	1.00	0.60	0.60
v/c Ratio	0.73		0.61	0.16	0.23	0.35
Control Delay	30.0		26.9	0.2	9.8	8.9
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	30.0		26.9	0.2	9.8	8.9
LOS	C		C	A	A	A
Approach Delay	30.0		16.8			9.2
Approach LOS	C		B			A
Queue Length 50th (ft)	110		150	0	22	71
Queue Length 95th (ft)	189		#327	0	59	158
Internal Link Dist (ft)	944		517			5002
Turn Bay Length (ft)				450	200	
Base Capacity (vph)	794		683	1583	657	1107
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.42		0.61	0.16	0.22	0.35

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 67
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 17.0 — Intersection LOS: B
Intersection Capacity Utilization 57.9% — ICU Level of Service B
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 18: Route 9G & Rt. 199 (W. Market St)

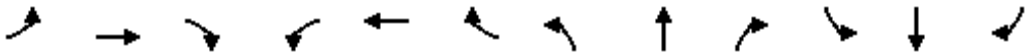




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	6	64	11	26	107	20	7	0	11	15	5	6
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	7	74	13	30	124	23	8	0	13	17	6	7

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	94	178	21	30
Volume Left (vph)	7	30	8	17
Volume Right (vph)	13	23	13	7
Hadj (s)	-0.05	-0.03	-0.29	-0.02
Departure Headway (s)	4.1	4.1	4.2	4.5
Degree Utilization, x	0.11	0.20	0.02	0.04
Capacity (veh/h)	848	866	790	744
Control Delay (s)	7.6	8.1	7.3	7.7
Approach Delay (s)	7.6	8.1	7.3	7.7
Approach LOS	A	A	A	A

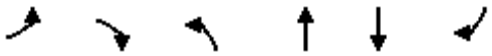
Intersection Summary			
Delay	7.9		
Level of Service	A		
Intersection Capacity Utilization	29.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	17	65	33	24	17	112	295	40	11	257	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	15	18	68	34	25	18	117	307	42	11	268	22
Pedestrians					1						2	
Lane Width (ft)					11.0						10.0	
Walking Speed (ft/s)					4.0						4.0	
Percent Blockage					0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	895	885	279	941	875	331	290			350		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	895	885	279	941	875	331	290			350		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	93	91	82	90	97	91			99		
cM capacity (veh/h)	218	256	763	193	257	707	1261			1197		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	100	77	466	301
Volume Left	15	34	117	11
Volume Right	68	18	42	22
cSH	445	257	1261	1197
Volume to Capacity	0.22	0.30	0.09	0.01
Queue Length 95th (ft)	21	31	8	1
Control Delay (s)	15.4	24.9	2.8	0.4
Lane LOS	C	C	A	A
Approach Delay (s)	15.4	24.9	2.8	0.4
Approach LOS	C	C		

Intersection Summary				
Average Delay	5.2			
Intersection Capacity Utilization	59.7%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	4	24	25	458	360	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.90	0.94	0.94	0.94
Hourly flow rate (vph)	4	26	28	487	383	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	926	384	384			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	926	384	384			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	96	98			
cM capacity (veh/h)	293	668	1169			

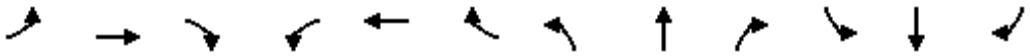
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	30	515	384
Volume Left	4	28	0
Volume Right	26	0	1
cSH	565	1169	1700
Volume to Capacity	0.05	0.02	0.23
Queue Length 95th (ft)	4	2	0
Control Delay (s)	11.7	0.7	0.0
Lane LOS	B	A	
Approach Delay (s)	11.7	0.7	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	425	14	41	337	8	47
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	443	15	43	351	8	49
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			457		886	450
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			457		886	450
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		97	92
cM capacity (veh/h)			1093		300	605

Direction, Lane #	NB 1	SB 1	NW 1
Volume Total	457	394	57
Volume Left	0	43	8
Volume Right	15	0	49
cSH	1700	1093	527
Volume to Capacity	0.27	0.04	0.11
Queue Length 95th (ft)	0	3	9
Control Delay (s)	0.0	1.3	12.7
Lane LOS		A	B
Approach Delay (s)	0.0	1.3	12.7
Approach LOS			B

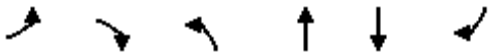
Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	76	18	27	4	6	0	12	363	4	1	304	34
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	81	19	29	4	6	0	13	386	4	1	323	36
Pedestrians											1	
Lane Width (ft)											10.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	762	760	341	796	776	389	360			390		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	762	760	341	796	776	389	360			390		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	74	94	96	98	98	100	99			100		
cM capacity (veh/h)	314	332	701	279	327	663	1199			1157		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	129	11	403	361
Volume Left	81	4	13	1
Volume Right	29	0	4	36
cSH	361	306	1199	1157
Volume to Capacity	0.36	0.03	0.01	0.00
Queue Length 95th (ft)	39	3	1	0
Control Delay (s)	20.4	17.2	0.4	0.0
Lane LOS	C	C	A	A
Approach Delay (s)	20.4	17.2	0.4	0.0
Approach LOS	C	C		

Intersection Summary				
Average Delay	3.3			
Intersection Capacity Utilization	45.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	27	8	8	347	328	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	30	9	9	386	364	2
Pedestrians				2		
Lane Width (ft)				10.0		
Walking Speed (ft/s)				4.0		
Percent Blockage				0		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	769	368	367			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	769	368	367			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	99	99			
cM capacity (veh/h)	369	681	1192			

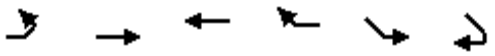
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	39	394	367
Volume Left	30	9	0
Volume Right	9	0	2
cSH	413	1192	1700
Volume to Capacity	0.09	0.01	0.22
Queue Length 95th (ft)	8	1	0
Control Delay (s)	14.6	0.3	0.0
Lane LOS	B	A	
Approach Delay (s)	14.6	0.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (veh/h)	54	48	0	124	35	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	59	52	0	135	38	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			111		220	85
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			111		220	85
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		95	100
cM capacity (veh/h)			1479		769	974

Direction, Lane #	NB 1	SB 1	SW 1
Volume Total	111	135	38
Volume Left	0	0	38
Volume Right	52	0	0
cSH	1700	1479	769
Volume to Capacity	0.07	0.00	0.05
Queue Length 95th (ft)	0	0	4
Control Delay (s)	0.0	0.0	9.9
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.9
Approach LOS			A

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	16.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (veh/h)	0	48	35	52	153	0
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	52	38	57	166	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			320			
pX, platoon unblocked						
vC, conflicting volume	95				118	66
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	95				118	66
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				81	100
cM capacity (veh/h)	1499				877	997

Direction, Lane #	EB 1	WB 1	SE 1
Volume Total	52	95	166
Volume Left	0	0	166
Volume Right	0	57	0
cSH	1700	1700	877
Volume to Capacity	0.03	0.06	0.19
Queue Length 95th (ft)	0	0	17
Control Delay (s)	0.0	0.0	10.1
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.1
Approach LOS			B

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	20.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Volume (veh/h)	4	48	153	120	57	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	52	166	130	62	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	525	62	62			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	525	62	62			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	95	89			
cM capacity (veh/h)	458	1003	1541			

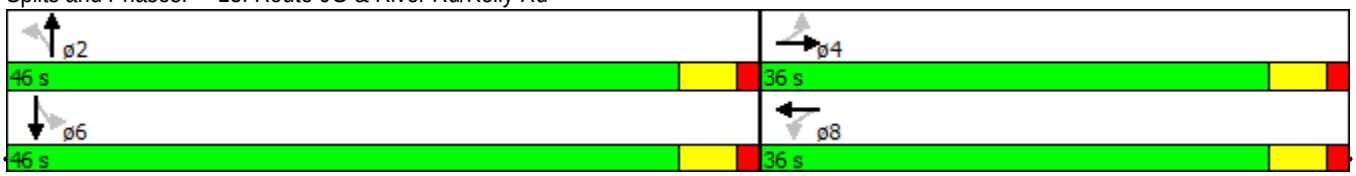
Direction, Lane #	WB 1	SE 1	NW 1
Volume Total	57	297	62
Volume Left	4	166	0
Volume Right	52	0	0
cSH	919	1541	1700
Volume to Capacity	0.06	0.11	0.04
Queue Length 95th (ft)	5	9	0
Control Delay (s)	9.2	4.7	0.0
Lane LOS	A	A	
Approach Delay (s)	9.2	4.7	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	31.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	34	85	51	26	4	89	282	55	9	261	18
Satd. Flow (prot)	0	1708	0	0	1828	0	0	1831	0	0	1862	0
Flt Permitted		0.944			0.691			0.868			0.986	
Satd. Flow (perm)	0	1624	0	0	1304	0	0	1605	0	0	1840	0
Satd. Flow (RTOR)		94			3			13			6	
Confl. Bikes (#/hr)			1			1						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	153	0	0	90	0	0	473	0	0	320	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Total Split (s)	36.0	36.0		36.0	36.0		46.0	46.0		46.0	46.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Act Effct Green (s)		9.0			9.0			44.3			44.3	
Actuated g/C Ratio		0.14			0.14			0.70			0.70	
v/c Ratio		0.49			0.48			0.42			0.25	
Control Delay		16.0			31.4			5.8			4.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		16.0			31.4			5.8			4.4	
LOS		B			C			A			A	
Approach Delay		16.0			31.4			5.8			4.4	
Approach LOS		B			C			A			A	
Queue Length 50th (ft)		19			29			57			34	
Queue Length 95th (ft)		64			67			127			75	
Internal Link Dist (ft)		240			215			5002			3600	
Turn Bay Length (ft)												
Base Capacity (vph)		845			641			1125			1288	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.18			0.14			0.42			0.25	

Intersection Summary	
Cycle Length: 82	
Actuated Cycle Length: 63.4	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 9.1	Intersection LOS: A
Intersection Capacity Utilization 62.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 15: Route 9G & River Rd/Kelly Rd

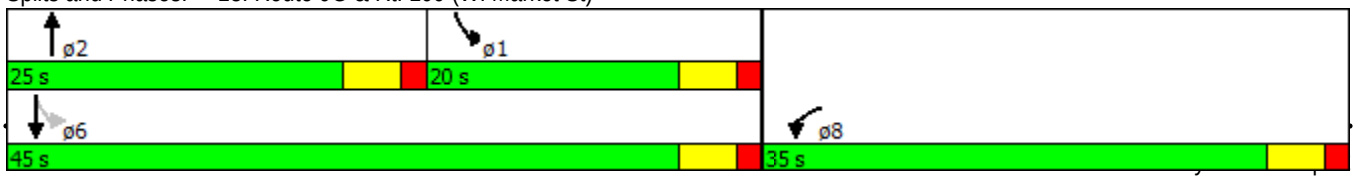


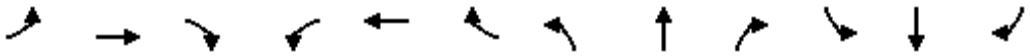
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	234	123	314	217	94	304
Satd. Flow (prot)	1735	0	1881	1599	1787	1881
Flt Permitted	0.968				0.458	
Satd. Flow (perm)	1735	0	1881	1599	862	1881
Satd. Flow (RTOR)	38			231		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	380	0	334	231	100	323
Turn Type	Prot		NA	Free	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases				Free	6	
Total Split (s)	35.0		25.0		20.0	45.0
Total Lost Time (s)	5.0		5.0		5.0	5.0
Act Effct Green (s)	18.8		24.7	69.2	40.3	40.3
Actuated g/C Ratio	0.27		0.36	1.00	0.58	0.58
v/c Ratio	0.76		0.50	0.14	0.15	0.29
Control Delay	30.9		24.9	0.2	9.5	9.4
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	30.9		24.9	0.2	9.5	9.4
LOS	C		C	A	A	A
Approach Delay	30.9		14.8			9.4
Approach LOS	C		B			A
Queue Length 50th (ft)	132		121	0	17	62
Queue Length 95th (ft)	219		#237	0	48	140
Internal Link Dist (ft)	944		517			5002
Turn Bay Length (ft)				450	200	
Base Capacity (vph)	779		670	1599	703	1095
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.49		0.50	0.14	0.14	0.29

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 69.2
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 17.6 — Intersection LOS: B
Intersection Capacity Utilization 54.7% — ICU Level of Service A
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 18: Route 9G & Rt. 199 (W. Market St)

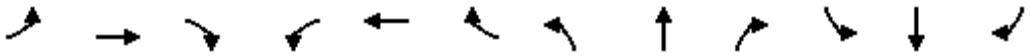




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	8	101	9	7	94	19	19	6	6	25	4	5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	110	10	8	102	21	21	7	7	27	4	5

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	128	130	34	37
Volume Left (vph)	9	8	21	27
Volume Right (vph)	10	21	7	5
Hadj (s)	0.00	-0.07	0.01	0.06
Departure Headway (s)	4.2	4.1	4.5	4.6
Degree Utilization, x	0.15	0.15	0.04	0.05
Capacity (veh/h)	835	850	745	733
Control Delay (s)	7.9	7.9	7.7	7.8
Approach Delay (s)	7.9	7.9	7.7	7.8
Approach LOS	A	A	A	A

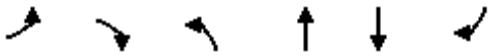
Intersection Summary			
Delay	7.9		
Level of Service	A		
Intersection Capacity Utilization	24.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	18	99	35	25	15	80	196	24	13	191	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	16	19	104	37	26	16	84	206	25	14	201	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	652	636	208	737	631	219	216			232		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	652	636	208	737	631	219	216			232		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	95	87	86	93	98	94			99		
cM capacity (veh/h)	334	367	832	268	372	826	1354			1342		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	139	79	316	229
Volume Left	16	37	84	14
Volume Right	104	16	25	15
cSH	620	347	1354	1342
Volume to Capacity	0.22	0.23	0.06	0.01
Queue Length 95th (ft)	21	22	5	1
Control Delay (s)	12.5	18.4	2.5	0.5
Lane LOS	B	C	A	A
Approach Delay (s)	12.5	18.4	2.5	0.5
Approach LOS	B	C		

Intersection Summary				
Average Delay	5.4			
Intersection Capacity Utilization	48.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	1	25	33	308	330	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	1	26	34	318	340	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	727	341	342			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	727	341	342			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	96	97			
cM capacity (veh/h)	383	706	1217			

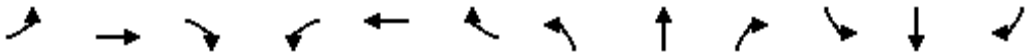
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	27	352	342
Volume Left	1	34	0
Volume Right	26	0	2
cSH	684	1217	1700
Volume to Capacity	0.04	0.03	0.20
Queue Length 95th (ft)	3	2	0
Control Delay (s)	10.5	1.0	0.0
Lane LOS	B	A	
Approach Delay (s)	10.5	1.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	306	2	38	312	5	41
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	312	2	39	318	5	42
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			314		709	313
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			314		709	313
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		99	94
cM capacity (veh/h)			1246		391	732

Direction, Lane #	NB 1	SB 1	NW 1
Volume Total	314	357	47
Volume Left	0	39	5
Volume Right	2	0	42
cSH	1700	1246	668
Volume to Capacity	0.18	0.03	0.07
Queue Length 95th (ft)	0	2	6
Control Delay (s)	0.0	1.1	10.8
Lane LOS		A	B
Approach Delay (s)	0.0	1.1	10.8
Approach LOS			B

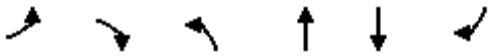
Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	50	6	27	0	11	0	30	256	4	1	264	54
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	54	7	29	0	12	0	33	278	4	1	287	59
Pedestrians											3	
Lane Width (ft)											10.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	673	666	316	697	693	283	346			283		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	673	666	316	697	693	283	346			283		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	84	98	96	100	97	100	97			100		
cM capacity (veh/h)	349	367	720	332	359	759	1219			1286		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	90	12	315	347
Volume Left	54	0	33	1
Volume Right	29	0	4	59
cSH	421	359	1219	1286
Volume to Capacity	0.21	0.03	0.03	0.00
Queue Length 95th (ft)	20	3	2	0
Control Delay (s)	15.9	15.4	1.1	0.0
Lane LOS	C	C	A	A
Approach Delay (s)	15.9	15.4	1.1	0.0
Approach LOS	C	C		

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	54.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	4	18	13	281	274	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	5	20	15	319	311	6
Pedestrians				1		
Lane Width (ft)				10.0		
Walking Speed (ft/s)				4.0		
Percent Blockage				0		
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	663	315	317			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	663	315	317			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	97	99			
cM capacity (veh/h)	424	729	1237			

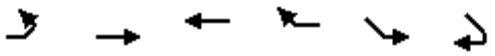
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	25	334	317
Volume Left	5	15	0
Volume Right	20	0	6
cSH	645	1237	1700
Volume to Capacity	0.04	0.01	0.19
Queue Length 95th (ft)	3	1	0
Control Delay (s)	10.8	0.5	0.0
Lane LOS	B	A	
Approach Delay (s)	10.8	0.5	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (veh/h)	65	30	0	91	30	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	71	33	0	99	33	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			103		186	87
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			103		186	87
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		96	100
cM capacity (veh/h)			1489		803	972

Direction, Lane #	NB 1	SB 1	SW 1
Volume Total	103	99	33
Volume Left	0	0	33
Volume Right	33	0	0
cSH	1700	1489	803
Volume to Capacity	0.06	0.00	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	0.0	9.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.7
Approach LOS			A

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	15.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (veh/h)	0	30	30	103	109	0
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	33	33	112	118	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			320			
pX, platoon unblocked						
vC, conflicting volume	145				121	89
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	145				121	89
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				86	100
cM capacity (veh/h)	1438				874	970

Direction, Lane #	EB 1	WB 1	SE 1
Volume Total	33	145	118
Volume Left	0	0	118
Volume Right	0	112	0
cSH	1700	1700	874
Volume to Capacity	0.02	0.09	0.14
Queue Length 95th (ft)	0	0	12
Control Delay (s)	0.0	0.0	9.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.8
Approach LOS			A

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	20.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	SEL	SET	NWT	NWR
Lane Configurations						
Volume (veh/h)	1	101	109	90	65	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	110	118	98	71	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	405	71	71			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	405	71	71			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	89	92			
cM capacity (veh/h)	555	992	1530			

Direction, Lane #	WB 1	SE 1	NW 1
Volume Total	111	216	71
Volume Left	1	118	0
Volume Right	110	0	0
cSH	984	1530	1700
Volume to Capacity	0.11	0.08	0.04
Queue Length 95th (ft)	9	6	0
Control Delay (s)	9.1	4.4	0.0
Lane LOS	A	A	
Approach Delay (s)	9.1	4.4	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	30.4%	ICU Level of Service	A
Analysis Period (min)	15		

PDCTC

Poughkeepsie-Dutchess County Transportation Council

vhb